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Archaeological Investigations at the Narrows and Martin Creek Sites, Douglas County, Oregon

Brian L. O'Neill

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ARCHAEOLOGICAL INVESTIGATIONS AT THE NARROWS AND MARTIN CREEK SITES,

DOUGLAS COUNTY, OREGON

TWO RIVERSIDE SITES IN THE MIDDLE UMPQUA BASIN

by

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with contributions by

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and
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Bureau of Land Management
Roseburg District
Roseburg, Oregon

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III

FOREWARD

Knowledge of the archaeological record in the Umpqua River basin of southwest Oregon has substantially increased through the 1980s. Very few archaeological investigations had been conducted in the region prior to 1976, when the Roseburg District of the Bureau of Land Management added a full-time archaeologist to its staff. Since that time, work by agency archaeologists in the BLM and U.S. Forest Service, contractors for the two agencies, other contractor projects, and graduate work by the author of this report which led to a dissertation have progressively established a regional framework for interpreting archaeological data. As this report demonstrates, the need for reliance on reconstructed chronologies in the neighboring Rogue, Coquille and Willamette drainage basins has greatly diminished.

BLM archaeological investigations at streamside sites along primary river courses in the Umpqua basin have been few, with most sites discovered on agency lands in upland settings along smaller tributaries. Consequently, the information reported here is especially important for addressing the character of sites in these settings. One result of this study is increased protection for the Narrows Site and an increased appreciation of sites located in similar settings along the North Umpqua River.

The BLM is pleased to distribute this report as a contribution in furthering the regional reconstruction of prehistoric lifeways in this important area of southwest Oregon.

Richard C. Hanes
Series Editor

Front cover: Slack water and falls below the Narrows on the North Umpqua River, Douglas County, Oregon.

ABSTRACT

This is a report of archaeological test excavations conducted at two prehistoric sites in the middle Umpqua Basin, Douglas County, Oregon. Work at these Bureau of Land Management administered sites, prompted by continued vandalism, was performed by BLM personnel, Umpqua Community College archaeological field school students, volunteers from the University of Oregon, and volunteers from the Rogue Valley Archaeological Society.

The Narrows Site (35DO153) lies adjacent to the North Umpqua River in the vicinity of Idleyld, Oregon, and was described as an aboriginal fishery in the 1855 cadastral survey records. Test pits placed on the terrace overlooking the river yielded 597 tools and 8913 pieces of lithic debitage. Approximately 22.6 m^3 were excavated. The artifact assemblage at the Narrows Site is varied, containing projectile points, knives, drills, scrapers, cores, choppers, hammerstones, edge faceted cobbles, stone bowl and hopper mortars, pestles, bone tools and a fragment of a baked clay figurine. This variety suggests its use as a base camp. The excavation of a portion of a house pit indicates that the site may have been, at times, permanently occupied. An analysis of the vertical distribution of cultural material, found to extend to approximately 150 cm below the surface, indicates the presence of four cultural components. Radiocarbon dated, these components represent portions of the Middle and Late Archaic periods, beginning approximately 6300 years ago.

Component I, with a series of four radiocarbon dates ranging from 90 ± 70 BP to 330 ± 80 BP, is found in a midden-like upper soil stratum. Associated with this component are barbed and tanged projectile points, bone tools, a baked clay figurine fragment, and a tightly flexed human burial found to have been buried in a basin-shaped pit.

Component II is dated by two radiocarbon assays; 450 ± 70 BP and 1020 ± 60 BP. Only four diagnostic projectile points were recovered from this component and include one small concave base point, two broad-necked and side-notched varieties, and a foliate-shaped point. Associated with this component are stone bowl and hopper mortars, and a partially exposed housepit.

Component III is dated by a radiocarbon assay of 5090 ± 80 BP on charcoal collected from a small, bisque-rimmed fire pit. Associated with this component are broad-stemmed, corner- and side-notched projectile points, and stone bowl mortar fragments.

Component IV is represented by the artifacts, debitage and fire pit uncovered at a depth of approximately 110 to 150 cm below the surface. Charcoal collected from the fire pit, which also contained small fragments of calcined bone, returned a date of 6270 ± 130 BP. The two projectile points recovered from this component include an asymmetrical broad-stemmed specimen and a convex base specimen.

The Martin Creek Site (35DO147), is a pair of rockshelters adjacent to the main stem of the Umpqua River in the vicinity of Kellogg, Oregon. Upper Shelter contained cultural deposits of at least 90 cm in thickness. The tool assemblage includes projectile points, biface fragments, utilized flakes, choppers, pestles, an abrader, and worked bone. The identified faunal remains include deer, hare, squirrel, salmon, and fresh water mussel. Hazelnut and myrtle nut fragments were recovered. Based upon an examination of the vertical distribution of the cultural debris, three components are indicated. The uppermost of these is dated by two radiocarbon assays: 350 ± 60 BP and 400 ± 70 BP. The projectile point assemblage is dominated by barbed and tanged varieties of the Gunther Series, consistent with the Late Archaic period radiocarbon dates.

Lower Shelter, filled to the ceiling with alluvium and colluvium, contained a cultural deposit of approximately 70 cm in thickness beginning at a depth of 150 cm below the surface. The artifact assemblage includes projectile points, a biface, utilized flakes, and choppers. The three projectile points recovered include two V-stemmed Coquille Series specimens and one convex-base serrated foliate. The single component of Lower Shelter is dated by one radiocarbon assay of 420 ± 60 BP.

A comparison of 21 Umpqua Basin projectile point assemblages, including those from the Narrows and Martin Creek sites, was undertaken in order to develop a local cultural chronology. Results of this statistical analysis indicate that these assemblages may be divided into three temporally separable groups, two of which are interpreted to be phases of the Late Archaic Period.

One group of assemblages, associated with Middle Archaic Period dates, is dominated by broad-stemmed projectile points. Sites containing these assemblages are found in a variety of settings in both the North and South Umpqua drainages. Riverine resources appear to have played as large a role as terrestrial resources during this period.

Assemblages of the Falls Phase, a Late Archaic occupation that until approximately 400 years ago was found basin-wide, characteristically contain Coquille Series projectile points. It is hypothesized that the geographic distribution of most recent assemblages of this phase, found in the South Umpqua drainage, reflects a constricted territorial distribution of the Takelman Cow Creek Band.

Assemblages of the Narrows Phase, the third temporal group, typically contain Gunther Barbed projectile points and are radiocarbon dated from 400 years ago to historic times. These assemblages are generally found within the territorial limits of the Athapaskan Upper Umpqua and appear to have supplanted those of the earlier Falls Phase.

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Several organizations and a good many people were involved in the test excavations at the Narrows and Martin Creek sites. Among the organizations involved were the Bureau of Land Management, Umpqua Community College, Oregon State Museum of Anthropology, and the Rogue Valley Archaeological Society. Overall coordination of the excavation and its participants fell to Isaac Barner, Roseburg District BLM archaeologist.

Brian O'Neill conducted the analysis of materials recovered from the two sites and drafted the report and accompanying maps and graphs.

The Narrows and Martin Creek sites are located on land administered by the Roseburg District Bureau of Land Management. Participating in the 1986 field season were the following BLM personel

Jay Beeson
Keven Carson
Dave Crossley
Tom Doss
Gene Lathrop
Steve Niles
Ed Richardson
Barry Williams
Larry Brooks
Ted Chiesna
Jeff Davis
Dave Harman
Bill May
Gary Passow
Jeff Wall
Walt Wood
Dick Burch
Kevin Cleary
Lyman Deich
Aaron Horton
Jerry Meyers
John Patrick
Dick Watson
Steve Yates

BLM soil scientist Dennis Hutchison provided an analysis of the soils at the sites, and SCS soil scientist Gerry Coleman assisted at the Narrows Site. Russ Holmes, BLM botanist, inventoried the flora in the immediate vicinity of the sites. John Patrick and Tom Watts, both foresters with the BLM, cored several of the trees at the Narrows Site in an attempt to determine the age of the stand. The cooperation of Acting North Umpqua Resource Area Managers Dick Norlin, Tom Watts, and John Patrick is gratefully acknowledged. Support from current Area Manager Dave Baker is also appreciated. The support of the Drain Resource Area Manager Ed Shepard is acknowledged.

The Bureau of Land Management fielded an archaeological crew during the summer of 1987. Crew members included Nora Bessler, Sean Hess, Brian O'Neill, Dennis Pontius, Clark Pope, and Bob Wenger. North Bend High School student Eric Wilcox joined the crew for a week as a volunteer.

Umpqua Community College participated in the Martin Creek and Narrows Site investigations by offering an archaeological field school during the summer of 1986. Space was provided on the UCC campus for classroom instruction and the initial processing of artifacts. Brian O'Neill served as Director of the field school. The College also provided its students with transportation to the archaeological site. Umpqua Community College students participating in the archaeological field methods session included Jim Sweeney, Mike Bjornson, Cheryl Allen, and Greg Lozano. Also thanked for his contribution and continued interest is Dr. Roger E. Haugen, Associate Dean of Instruction at Umpqua Community College.

Participating from the Rogue Valley Archaeological Society during the 1986 season were

Bob Amos
Eric Amos
Sharon Amos
Mary Collier
Nancy Hitchcock
Beth Judy
Ellie McCoy
Nancy Ottis
Ruth Pepple
Leona Prince
Aaron Prince
Jann Taylor
Scott Taylor
Paul Tuttle
Ruth Tuttle

Their enthusiasm was a tonic.

Volunteering from Roseburg was Junior High School student Carri Gifford, an enthusiastic and interested participant in the Martin Creek excavations.

During the spring of 1987 a group of volunteers, sponsored by the BLM, assisted in the removal of an aboriginal burial that had been discovered during the preceding summer's test excavations. Directing the excavation of the burial was Brian Hemphill, doctoral candidate in anthropology at the University of Oregon. Also participating were Cheryl Allen, Isaac Barner, Colleen Goodman, Dan Klug, and Brian O'Neill.

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The faunal material collected from the Upper Shelter of the Martin Creek Site was analyzed by Dr. Ruth Greenspan.

Debra Barner of Roseburg identified the fresh water mussel.

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The artifact illustrations accompanying the Narrows Site report were drawn by Carol Larosa. Those accompanying the Martin Creek Site report were drawn by Meiko Hocking.

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PART I

ENVIRONMENTAL SETTING
AND
CULTURAL BACKGROUND

CHAPTER 1

INTRODUCTION AND SETTING

The Umpqua River Basin of southwest Oregon is a region of varied relief. Stretching from the Cascade Mountains on the east, to the Pacific Ocean on the west, the basin includes forested uplands and open river valleys. The thrust and tilt of volcanic and sedimentary deposits, and the erosion of these features by swiftly flowing streams and rivers have created a generally rugged topography. Anadromous fish runs, once more numerous, still draw fishermen to the banks of these streams.

At the time of contact, the Umpqua Basin was occupied by several linguistically separable groups of Native Americans whose numbers had apparently already been reduced through epidemics. Because ethnographic investigations were undertaken in this area at a late date, much of what we know of the lifeways of these people is anecdotal. Archaeological investigation, then, is crucial to our understanding not only of the prehistory of this region, but also to the contact period.

The archaeological resources of the Umpqua Basin, while recognized to be substantial, have only within the past 15 years begun to be professionally investigated. These investigations have generally been the result of federal laws regarding the protection and management of cultural resources. Many archaeological sites have been located as the result of pedestrian surveys prior to the harvesting of timber on land administered by the Umpqua National Forest and Bureau of Land Management.

This report presents the results of investigations conducted at two Umpqua Basin archaeological sites. These sites include an aboriginal fishery and a set of river-side rockshelters.

Situated on the south bank of the North Umpqua River approximately five miles upstream from the community of Glide, the Narrows Site (35DO153) occupies a terrace overlooking a popular fishing spot long used by Native Americans to exploit the abundant fish resources of the river. In 1855, at the time of the original cadastral survey of this region, the Indians were heavily using the area:

> The North Umpqua River is a bold, rapid stream, running through the township from East to West, and usually overflows its banks in times of high water. There are falls of about 10 or 15 feet, say, one mile West from the East boundary of township, where the Indians have an extensive salmon fishery, also a kind of village on the North Side of the river (Flint 1855:4375).

Although the Narrows Site has been part of the local oral tradition and had been briefly described by a local historian (Bakken 1973:6-7), it was not recorded until July of 1979 (Corliss 1979). A description provided by David Corliss, former Roseburg District BLM archaeologist, indicated that the site contained "three possible house pits on a high bench overlooking the falls at the Narrows" (1979). The cultural material observed at this "apparently undisturbed" fishing site included "cobble choppers, end-battered hammerstones, mano, (and) spall scrapers" (Corliss 1979).

The site subsequently became the object of relic hunters, prompting the Bureau of Land Management to conduct a series of archaeological test excavations. The Narrows Site was originally tested in 1981, revisited after continued vandalism in 1986, returned to in early 1987 for the removal of a human burial, and revisited later in the summer of 1987 in order to test lower components.

Although the site has been disturbed through vandalism and natural processes, intact cultural resources remain. These comprise a stratified, multicomponent site representing portions of the Middle and Late Archaic periods. The diagnostic artifacts recovered are consistent with the radiocarbon dates collected from the site. With a date of 6270 ± 130 BP, it is currently the oldest radiocarbon dated archaeological site in the Umpqua Basin.

The Martin Creek Site (35DO147) is located on the east bank of the Umpqua River approximately 18 river miles upstream from the community of Elkton. The site was discovered in June of 1980 by Dave Corliss. Surface indications of prehistoric occupation in the vicinity of one rockshelter, the Upper Shelter, were sparse and consisted only of "a cobble tool (and) a few fire-cracked rocks" (Corliss 1981b) at the base of a prominent sandstone outcrop. Cultural material was discovered in a second rockshelter, the Lower Shelter, following the removal of almost 1.7 meters of alluvial and colluvial fill that had sealed this overhang to the ceiling. Vandalism to the cultural deposits within the rockshelters prompted additional testing of the site in 1981 and 1986.

The Upper Shelter contains a cultural deposit which includes chipped and ground stone tools, bone tools, faunal remains, and macrobotanical remains. Based upon an analysis of the vertical distribution of this material, three cultural components are identified. Two radiocarbon assays of 350 ± 60 BP and 400 ± 70 BP date the uppermost component to the Late Archaic period. This designation is consistent with the projectile point types recovered from the fill of the rockshelter. The assemblage is dominated by barbed and tanged points of the Gunther Series which are dated elsewhere in the Umpqua Basin to no earlier than 600 years ago.

The Lower Shelter contains a chipped stone tool assemblage that is similar in some respects to that of the Upper Shelter; there are relatively large numbers of choppers and unifacially worked flakes in each. The projectile points of the Lower Shelter, however, are represented by two V-stemmed Coquille Series specimens and one convex-base serrated foliate. No narrow-necked, tanged or barbed points were found in the cultural deposit of the

Lower Shelter. One radiocarbon assay dates the component of the Lower Shelter to 420 ± 60 BP.

The Martin Creek and Narrows sites lie within the ethnographic territory of the Athapascan-speaking Upper Umpqua Indians. David Douglas, the explorer and botanist, visited the region in the 1830's and a record of his observations is useful in reconstructing the lifeways of the native inhabitants of this area.

Archaeologists conducting research in the Umpqua Basin have often lamented the fact that there exists no independent framework within which the prehistoric materials of this southwest Oregon river basin might be placed. Part IV of this report presents a comparison of 21 Umpqua Basin projectile point assemblages, six of which are provided by the assemblages of the two sites investigated in parts II and III. This investigation, through an analysis of projectile point assemblages, is a step toward providing a cultural chronology of the Umpqua Basin that is not only an independent formulation, but is responsive to chronologies that have been developed for other southwest Oregon materials. This inquiry, involving seriation and cluster analysis, provides the basis for proposing a cultural chronology of the Umpqua Basin that distinguishes geographically and temporally separable phases of the Late Archiac Period.

ENVIRONMENTAL SETTING

The Narrows and Martin Creek archaeological sites are located in the Umpqua River drainage in southwest Oregon. The Umpqua River Basin may be divided into three general provinces (Figure 1.1).

a. The lower Umpqua Basin extends eastward from the estuary at Reedsport on the Pacific Ocean to Scottsburg, the limit of the effects of the tides.

b. The middle Umpqua Basin follows the main stem of the Umpqua upstream from Scottsburg, past the confluence of the North and South Umpqua rivers at "The Forks", to about Idleyld on the North Umpqua and to Tiller on the South Umpqua River.

c. The upper Umpqua Basin encompasses the mountainous regions upstream from Tiller and Idleyld from which the South and North Umpqua rivers descend.

Both Martin Creek and the Narrows are stream side sites situated in the middle Umpqua Basin. The Martin Creek Site is a set of rockshelters located beside the main stem of the Umpqua River. The Narrows Site is situated on a terrace overlooking the North Umpqua River near the community of Idleyld.

The basin is bounded on the north by the Calapooya Divide, on the east by the Cascade Range, and on the south by the Klamath Mountains. Surrounding the Umpqua Basin are other river basins which include the Mid Coast Basin

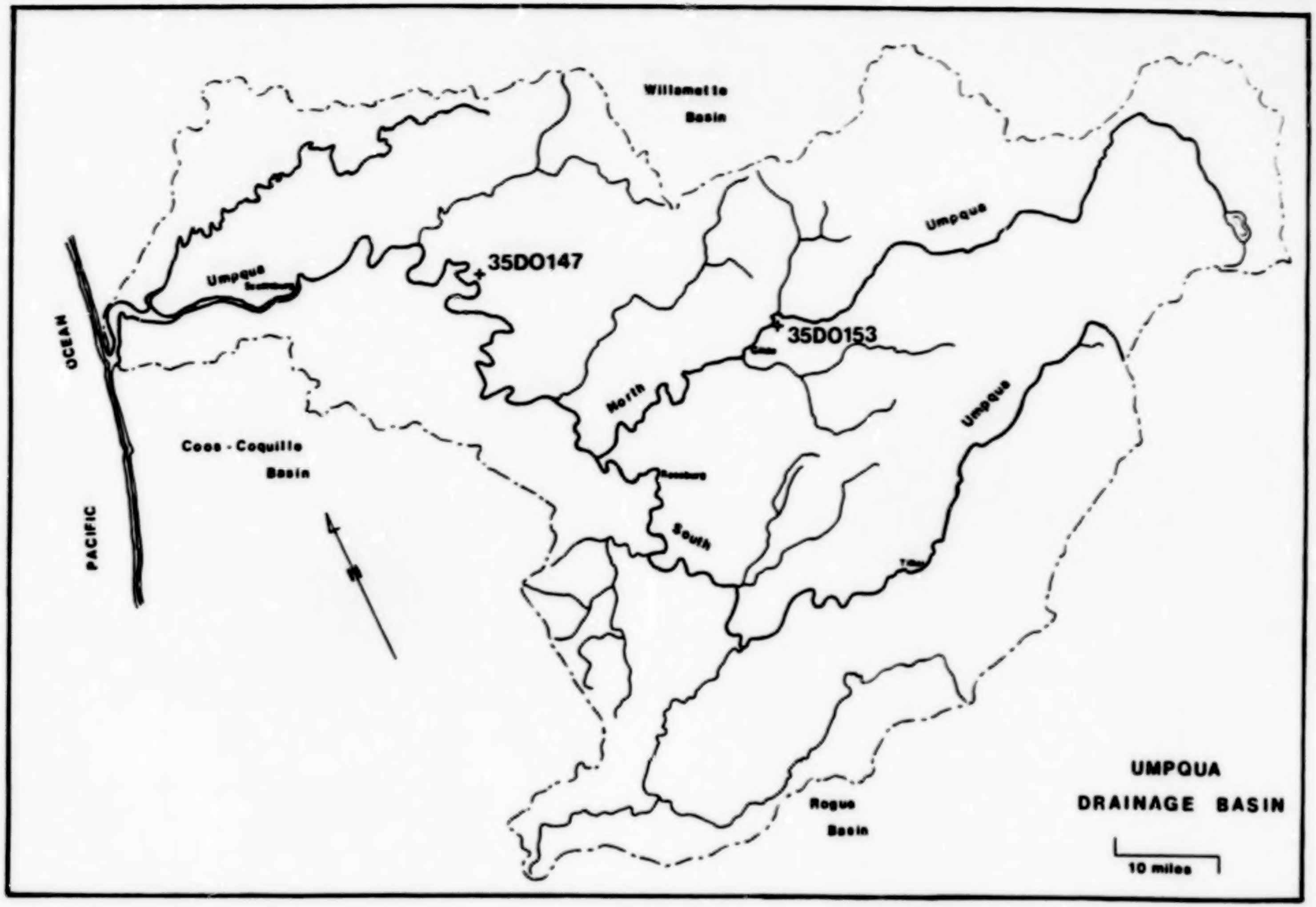

Figure 1.1 Location of the Narrows and Martin Creek sites in the Umpqua River Basin of southwest Oregon.

(Siuslaw), Willamette Basin, Coos-Coquille Basin, and Rogue Basin.

Originating in the Cascade Range at an elevation of about 1800 m (6,000 ft), the North and South Umpqua rivers descend and converge in the middle Umpqua Basin to form the Umpqua River about 9.6 km (6 mi) northwest of Roseburg at an elevation of about 110 m (360 ft). This central valley region of the middle Umpqua Basin is characterized by broad flood plains, gently rolling upland hills, and valleys of 1.2 to 2.4 km (.75 to 1.5 mi) in width connected by fairly narrow canyons. The Umpqua River flows westward to the Pacific Ocean through the Coast Range. Records indicate a history of frequent flooding with major floods occurring in 1861, 1890, 1927, 1953, 1955, 1964, and 1971. Stream flows are heaviest in the Umpqua Basin during November through March (Federal Insurance Administration 1978).

The gravel bars of the Umpqua River contain cobbles of basalt, andesite and cryptocrystalline silicates (CCS). Though the local occurrence of obsidian is undocumented (c.f. Skinner 1983), tools and waste flakes from archaeological sites in the region indicate that aboriginal groups had access to this material, perhaps through trade.

Like that of western Oregon in general, the climate of the Umpqua Basin is characterized by mild, wet winters and hot, dry summers (Franklin and Dyrness 1973). Average annual precipitation, reflecting the orographic barriers of the Coast and Cascade ranges, varies from 60 to 125 cm (25 to 50 in) in the central valleys and falls mainly as winter and spring rain. Snow is infrequent at the lower elevations but accounts for much of the winter precipitation at higher elevations. The annual summer drought conditions have fostered a floral and faunal regime characteristic of the western Oregon Transition Zone and the Semiarid Division of the Upper Sonoran Zone (Bailey 1936:12-13, 19-23). The lowland valley floors, while prehistorically maintained as grasslands through burning by the Indian inhabitants (c.f. Johannessen et al. 1971; Towle 1979, 1982; Boyd 1986), are now kept open by grazing. South-facing slopes are frequently bald, while broad-leafed forest dominated by oak and madrone often cover other slopes. Coniferous forests tend to occupy the higher ridges.

Wildlife inhabiting the basin includes Roosevelt elk, black-tailed deer, black bear, mountain lion (seen at the Narrows Site), river otter, beaver, marten, muskrat, raccoon, brush rabbit, and porcupine. Avian species within the region include California and mountain quail, blue and ruffed grouse, mourning dove, wood duck, common merganser, bald eagle (nesting adjacent to the Martin Creek Site), and pileated woodpecker (Lauman et al. 1972).

The Umpqua River has been known as one of the more productive fisheries on the west coast (Netboy 1974:323-333) and, though archaeological and ethnohistoric data are sparse, it is suspected that the Native Americans inhabiting the Umpqua Basin took full advantage of this resource, making it one of the major staples of their subsistence economy. Among the anadromous fish (Chinook salmon, Coho salmon, steelhead) the periods of greatest concentrations within the river system overlap. Chinook salmon spawn during September through January with their peak run occurring from October through December. Coho salmon are in the system from the last part of September through the middle of February, their peak spawning period being October through December. Steelhead enter the river in November and remain until May, reaching their peak during November through March (Lauman et al. 1972; Baxter and Willingham 1980:8; Simmons and Gallagher 1985:2-5 and Table 2-3). In addition to the anadromous species, the Umpqua River also supports populations of lamprey, rainbow trout, sucker, cutthroat trout, shiner, Umpqua squawfish, dace, and sculpin. Freshwater mussels are also present in the river.

CHAPTER 2

ETHNOGRAPHIC BACKGROUND

An understanding of the ethnographic setting of an archaeological investigation provides models and analogies against which the recovered data may be compared.

Determining the linguistic and territorial distribution of Indians in the Umpqua Basin is made difficult by the sparseness of the ethnographic record for this region. The native population was incalculably affected by a number of early contact period events: the epidemic of 1830-33 (Cook 1955; Taylor and Hoaglin 1962; Boyd 1975); the establishment of the Hudson's Bay Company's Fort Umpqua in the vicinity of Elkton in 1836 (Schlesser 1973); the Euroamerican settlement of the basin beginning in 1846 (Applegate 1914; Honey and Hogg 1980:110-115); and the treaties and subsequent removal of aboriginal populations to reservations (Honey and Hogg 1980:116-118).

A few sources of information are available to help elucidate the lifeways of the native inhabitants of the Umpqua Basin. These include early explorers' journals (i.e. Douglas 1959; Hines 1851), published reminiscences of early settlers (i.e. Applegate 1914; Riddle 1968), oral histories of local residents recording both personal observations and family traditions collected as part of a WPA project in 1938, and the oral histories of members of the Cow Creek Band of Umpqua Tribe of Indians (i.e. Jackson 1978, 1979; Shaffer 1980). Finally, analogy with neighboring groups or linguistic cohorts can be usefully applied (e.g. Hanes 1976:8-16).

Portions of the Umpqua Basin were occupied by at least five aboriginal groups at the time of Euroamerican contact (Figure 2.1). Among these groups were:

a) the Kalapuyan (Penutian) Yoncalla who inhabited the northern portion of the basin, principally the Elk and Calapooya creek drainages;
b) the Penutian Takelma--including Upland and Lowland Takelma and probably the Cow Creek Band of Umpqua Tribe of Indians, occupying the Cow Creek drainage and upper South Umpqua region;
c) the Athapascan Upper Umpqua which included "bands from Scottsburg upriver (north fork) to the Cascades and in the Central Valley" (Honey and Hogg 1980:69);
d) the Siuslawan (Penutian) Lower Umpqua or Kuitsh who occupied the coastal territory upriver to Scottsburg; and,
e) the Sahaptian (Penutian) Molalla who were present in the upper Umpqua Basin (Honey and Hogg 1980:66-76; cf. Beckham 1986:27-39).

From this accounting of territorial ranges it would appear that the middle

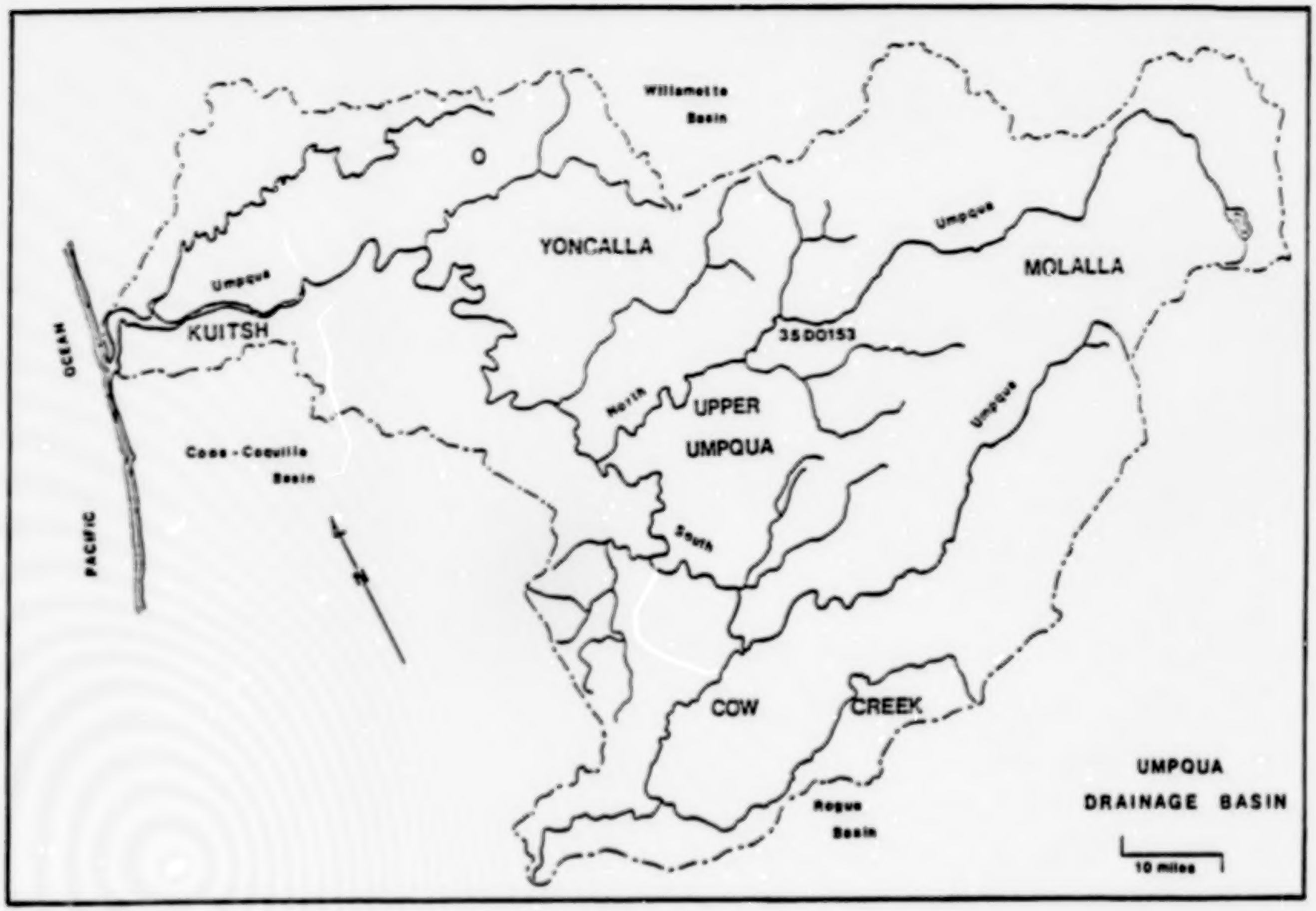

Figure 2.1. Distribution of aboriginal groups in the Umpqua Basin ca. 1850 (based upon Beckham 1986:39).

Umpqua Basin was variously exploited by segments of the Yoncalla, Upper Umpqua and Takelma. While David Douglas mentions meeting Kalapuya Indians--presumably Kalapuyan Yoncalla--in the vicinity of Kellog where the Martin Creek Site is located (Douglas 1959:225), he describes the villages in this region as being occupied by the Athapascan Upper Umpqua.

Kalapuyan, Takelman, and Siuslawan are languages and families of the widespread Penutian phylum which also includes Sahaptian, Klamath-Modoc, Molalla, Cayuse, Chinookan, Alsea, and Coosan. The Takelma spoke a language closely related to the Kalapuya of the Willamette Valley. Glottochronology, a lexicostatistical technique used to estimate the length of time elapsed since dialects or languages diverged from a common ancestor, suggests tha Kalapuya and Takelma diverged perhaps some 2400 years ago (Swadesh 1965:237). While no archaeological work has been conducted in that region of the Umpqua Basin occupied by the Kalapuyan Yoncalla, a number of excavations have been undertaken in the South Umpqua drainage where the Takelma claimed territory (cf. Beckham 1986; Gray 1987).

The Upper Umpqua, presumably the group that inhabited the region around the Narrows and Martin Creek sites, shared a common language and culture with other Athapascan speakers occupying a crescent-shaped area which includes coastal drainages south to the Smith River region of northern California. Linguistic reconstruction and glottochronological evidence suggest that a group, or groups, of Athapascan speakers migrated from the NaDene homeland in the western subarctic to the southwest Pacific coast at approximately AD 900 (Hoijer 1956, 1960). While there were regional variations in dialect, there were only minor differences in subsistence pursuits, material culture, and ceremony among these Pacific Athapascan groups (Drucker 1937:285). The lands that these people occupied were generally along rivers containing abundant anadromous fish resources. Kroeber (1939) grouped the cultures of this area together in a distinct cultural subarea of the Northwest Coast.

The archaeological analysis presented in Part IV indicates that the Athapaskan Upper Umpqua are recent arrivals to the Umpqua Basin and that the Takelman Cow Creek, who apparently occupied both the North and South Umpqua drainages at one time, were displaced in the North Umpqua drainage by the Athapaskan speakers.

POLITICAL ORGANIZATION AND POPULATION ESTIMATES

Ethnographically, the Indians of southwestern Oregon and northwestern California lived in politically and economically autonomous villages comprised largely of patrilineally related kin. There was no formal political organization above the village level, although alliances between groups could be formed and strengthened by the purchase of brides from neighboring patrilineal groups (Drucker 1937). Within these villages a "big man" helped direct affairs and settle disputes. His position was achieved through the strength of his personality as well as the possession of wealth and its strategic redistribution. Though a big man's wealth was inherited by his son, without a singular personality and a generous use of the inherited wealth the son would not necessarily earn the honor and privileges of big man (Drucker 1937).

The size of the patrilineal band varied, as did the size of the village. Along the main stem of the Umpqua River, David Douglas described one village that he visited in October of 1826 as containing "two lodges and about twenty-five souls, the greater part women and wives of Centernose [an Indian word], the chief of the tribe inhabiting the upper part of the river, and who is at present forty-five miles higher up the river" (1959:224). Farther upriver he encountered a settlement consisting of one lodge (1959:228) and another containing three (1959:229). A single family might permanently occupy an otherwise temporary campsite, such as a fishing camp, while still maintaining their alliance with the kin group (Drucker 1937:224).

Buchanan (1938:4) notes that, "The principal village of the Umpquas was on the Calapooia (Creek) at Camas Swale, called Hewut. Other important villages were located at Elkton, Olalla, Camas Valley, Kellog, Winchester, Yoncalla, and at Roseburg in what was known as 'the Grove,' now Hamilton's Addition." The village sites of the Upper Umpqua "were probably located on alluvial terraces adjacent to the Umpqua River and its major tributaries" (Simmons 1985:3.4).

Riddle (1968:34) provides population estimates for groups occupying the South Umpqua tributaries of Cow and Myrtle creeks in the early 1850's. These included:

a)	Miwaleta	75
b)	Quintiousa	50
c)	Targunsan	25
d)	Warta-hoo	25-30
e)	Myrtle Creek	40

Buchanan (1938:4), citing Henry H. Woodward, states that in 1850 the Umpqua numbered approximately 1500 and of this figure 500 were "warriors." These population estimates were greatly diminished following the removal of the Umpqua to the Grande Ronde Reservation. In 1902 there were 84 individuals on the reservation (Hodge 1911:866) and thirteen years later there were "not more than a dozen" (Buchanan 1938:5).

SHELTER AND SUBSISTENCE ECONOMY

It appears that there were three distinct types of habitation structures in use in southwest Oregon at the time of contact. These included:

a) Rectangular semi-subterranean cedar plank houses with an attached woodshed through which one must pass to reach the outside. If, as Drucker suggests (1937:279), these were similar to the Rogue River type dwellings, the dimensions would have been approximately 3.5 x 5 m and the excavated pit would have varied from .5 to 1.5 m in depth.

b) Smaller semi-subterranean earth-covered sweat lodges in which men slept (Drucker 1937:279).

c) Temporary grass-thatched houses (or "windbreaks") used at temporary or special purpose camps (e.g. fishing camps) (Drucker 1937:279).

While not described ethnographically, there is an archaeological example of a lean-to that was placed in front of a natural rock overhang or rockshelter. A framework of limbs was constructed, secured with twine, and covered with bark, twigs or matting (Minor and Connolly 1987).

Hunting

Early accounts suggest that big game animals such as deer, elk and bear were plentiful in the basin (Douglas 1959). Of these, deer seemed to have been an important and fairly reliable source of food. It has been suggested that one of the reasons for the annual burning of grasslands by the Indians was to encourage deer to convenient hunting spots.

At the time of contact the Indians used bow and arrows to hunt game. The bows, made of yew wood, were approximately 75 cm long. The arrows were tipped with stone points. They were said to be highly effective to a distance of 45 meters (Riddle 1968:44). To stalk the deer a hunter might use a deer-head camouflage in order to get close to the animal.

A communal deer drive entailed the construction of long brush fences, or barriers, across the head of a canyon. Openings would be left in these fences and fiber rope snares were placed in them.

> Then a great drive was organized with Indians strung along the sides of the canyon. Those making the drive, with dogs, making a great racket crying "ahootch, ahootch", and those stationed on the ridges were making the same sound, while their wolf dogs kept up their howling. All the noise was made to direct the deer to where the ropes were located (Riddle 1968:43).

These deer provided meat as well as skins for clothing.

Riddle (1968:44) also states that snares were used to trap water fowl and grouse.

Fishing

Though the ethnographic record of the Umpqua Basin is not as effusive for this aspect of the subsistence pattern as is the case elsewhere in the Pacific Northwest and Plateau, it is speculated that fish played a major role in providing a large, dependable source of food. The abundant anadromous fish were taken by trap (Riddle 1968:44) and spear (Douglas 1959). Freshwater mussels were also apparently harvested from the river (Henbest 1984).

David Douglas reports having salmon available for meals at Indian villages that he visited in the Umpqua Basin during October and November of 1826. While it is unclear whether or not he witnessed aboriginal fishing techniques during this sojourn, he was led to believe that the Indians of the Umpqua were "totally unacquainted with fishing with a net" (1959:227). Spearing of fish and night fishing with spear and "flare" were apparently the only techniques with which he became familiar.

Riddle's description of salmon fishing in the 1850's on Cow Creek illustrates not only the trap method used by the Indians but also gives some idea of the size of the harvest that might be expected:

> The silver salmon came in such multitudes in the fall runs that they were easily taken at the falls of Cow Creek. Dams of sticks were made across the small channels through the rocks and traps with hazel rods woven together with withes forming a basket about ten feet long and about three feet in diameter at the upper or open end and coming to a point at the closed or lower end. This trap was fastened in the rapid water in the narrow channel with twisted hazel [with] withes fastened to the poles of the dam. The salmon in great numbers would pass up by the side of the trap and, failing to get above the dam, would be carried back into the open end of the trap and the weight of the water would hold them. The Indians would work two such traps and when the river began to raise in the fall they would take several hundred of a night. When the fall rains came sufficient to raise the river two or three feet the great run of salmon would come day and night. Crowding up under the falls hundreds of them being in sight at one time (1968:44).

William Allen (1938:6) records aboriginal fishing in the Roseburg vicinity around 1865:

> Large numbers of [Umpqua Indians] would come to Roseburg during the salmon-run in the spring. They would be accompanied by their squaws, papooses, and ponies and would congregate at The Grove which then covered the present site of the railroad shops. The squaws would get a long, straight pole about 12 feet long which they would sharpen at the small end with a long tapered point. This point they would then put over a slow fire and heat it, in some way known to themselves, to harden it. This pole was used to spear the salmon but was never used by squaws. It required much skill to spear and then keep the salmon on the stick and not allow it to wiggle off. This they did by pushing forward continuously on the pole and working the salmon toward the shore, never making any back movement so that the fish could slip off. When near the shore the squaws would rush in the water, grab the fish by the gills, take it off the pole and carry it to the shore.
>
> The Indians would stay for weeks fishing in this manner during the season. The salmon were very plentiful in those days and the squaws were kept very busy drying and smoking salmon flesh which was cut up in strips and small pieces for drying.
>
> The Indians would cure enough fish to last them through the year and when they departed from Roseburg after the fishing season, they would have large numbers of ponies heavily loaded with dried and cured salmon (Allen 1938:6-7).

The use of the weir for fishing on the main stem of the Umpqua River was described by Arba R. Stearns (1938:2-3):

> [In the vicinity of Scottsburg the Indians] used a "Stick net" which was made of straight limbs that had been trimmed clean and which were about twelve or fifteen feet long by one and a half to two inches in diameter. These would be laid like a rail fence, there being two sections of rails the ends coming together as a "V" at one end. The river at the top of some good rapids would be dammed all but a part that was to be spanned by the open part of the V "stick net" which would be placed in the river with the closed end up stream. The fish would go up the rapids, would meet the slanting dam of stone and stakes, placed upright, would run along this till led into the wide or open end of the "stick net" which filled the open place left in the river by the dam. The fish would work their way up to the pointed end of the stick net and the Indians had no trouble gaffing them at pleasure.

Possibly reflecting the importance of fishing in the subsistence economy of the people, among the Athapascan Tolowa hereditary ownership of fishing sites was practiced (Drucker 1937:232). According to Drucker "...riffles for spearing, trapping salmon, etc., most small streams which fish entered; sites of 2 annual weirs in river, [were] all private, hereditary property" (1937:243).

Anadromous fish appear to have been a relatively predictable and abundant resource, and because the technology was available to store the surplus catch, salmon was an important part of the diet of the aboriginal inhabitants of the Umpqua Basin. If salmon was as important a dietary staple for the Indians of the Umpqua Basin as it was elsewhere in southwestern Oregon and northwestern California, the seasonal occurrence of the fish in the river--during fall and spring--would have played a large role in influencing population movement and aggregation at fishing spots to which groups had rights.

It is clear that techniques for exploiting the fish resource depended upon the situation at hand. Weirs and traps are suitable methods in those circumstances described; spearing and gaffing may be more appropriate in slack water or in riffles. Though not attested for the Upper Umpqua, lifting nets, such as were used by the Athapascan Lower Rogue groups, may have been used along the rivers of the Umpqua Basin. The frame of the lifting net was made of "a long stick of vine maple one end of which was steamed and bent into a loop while the other end served as a long handle" (Drucker 1938:271). Another technique may have been angling; a bone artifact recovered in recent archaeological deposits at a fishing site along the South Umpqua River is interpreted as a fish lure (Minor 1983:21-22). Also recovered from archaeological sites have been stone net weights (Ross and Snyder 1986; Lyman 1985).

Plant Foods

Three varieties of plants figure prominently in the literature--acorns, camas, and tarweed seed (cf. Riddle 1968; Schlesser 1973; Jacobs et al. 1945;

Sapir 1907). In the narrow valleys of the middle Umpqua Basin suitable environments for the growth of these trees, roots, and plants are common. The early cadastral survey records of 1853 note many "oak openings" where stands of oak are found on the valley floors as well as along the low hills of the basin. Low, wet areas which have since been drained provided optimal conditions for the growth of camas (e.g. Howard 1938:2). Dry upper terraces along the sides of the hills overlooking the river and tributary streams were suitable for tarweed. The gathering of each of these was apparently done communally, their processing involving no small amount of effort.

Riddle's description of the gathering and processing of tarweed seed provides another rationale for the practice of aboriginal burning in this area as well as a view of the use of hopper mortars.

> During the summer months the squaws would gather various kinds of seeds of which the tar weed seed was the most prized. The tar weed was a plant about thirty inches high and was very abundant on the bench lands of the valley, and was a great nuisance at maturity. It would be covered with globules of clear tarry substance that would coat the head and legs of stock as if they had been coated with tar. When the seeds were ripe the country was burned off. This left the plant standing with the tar burned off and the seeds left in the pods. Immediately after the fire there would be an army of squaws armed with an implement made of twigs shaped like a tennis racket with their basket swung in front they would beat the seeds from the pods into the basket. This seed gathering would only last a few days and every squaw in the tribe seemed to be doing her level best to make all the noise she could, beating her racket against the top of her basket. The mortar was formed by forming a round hollow in the face of flat boulders, over which was placed a basket with a hole in the bottom to fit the depression in the rock, forming a kind of hopper to hold the seeds, then with a stone fashioned about two inches in diameter at the lower end and tapering to the other end to a size easily grasped with the hand the operator would sit upon the ground with the mortar between her knees and would pound the seeds, using the pestle which was usually about ten inches long, and weighing five or six pounds, with one hand and stirring the seeds with the other, often changing hands using right or left hand for pounding or stirring the seeds with equal skill (Riddle 1968:45-46).

Among the Tualatin of the lower Willamette Valley, tarweed gathering areas were associated with winter village groups. These areas may be sub-divided, the wealthier men controlling access to their individual plots which may yield as much as 10-20 bushels of seeds (Zenk 1976:58). The seeds were preserved by parching.

Camas, found to be an important staple in the salmon-poor Willamette Valley to the north, was gathered by the Indians of the middle Umpqua Basin to be processed and stored as food for the winter months.

> The greatest part of their winter food was the "kamass" -- a small onion shaped bulb about one inch in diameter and were plentiful in the low lands of the valley. In the early morning the squaws would be out in

> the kamass field provided with a basket -- a cone shaped affair wide open at the top, swung on the back and carried with a strap across the forehead.... Each squaw would be armed with a kamass stick made of Indian arrow wood fashioned to a point at one end by burning and rubbing the charred wood off leaving the point as hard as steel. At the top end was fitted a curved handle, generally a piece of deer horn. Locating the bulb by the seed top above ground they would insert the stick under the root with the weight of the body, prying up the kamass, which they would deftly throw over the shoulder into the basket. In this manner if the expert squaw worked all day she could bring home about one bushel.
>
> The kamass was cooked by excavating a pit, filling it with wood with rocks on top. After the rocks were sufficiently heated they were covered with dry grass and then a great lot of kamass, covering them up with earth for several days. When they came out they would be of a reddish brown color and were sweet and really good to eat (Riddle 1968:45).

After being baked in the earth oven, camas bulbs could be sun dried or mashed and formed into cakes. The cakes and dried bulbs could then be stored in baskets for winter use (Zenk 1976:53-56).

Acorns, an integral part of the diet of the Indians of northern California and southwestern Oregon (Baumhoff:1963), were gathered and processed by the aboriginal occupants of the middle Umpqua Basin.

> The white oak acorn was used as food.... The acorns were pounded in a mortar, the hulls separated, and meat pounded into a meal. It was then spread out on clean sand and water poured over to take out the bitter taste. It was then boiled in a mush or porridge (Riddle 1968:45).

It should be noted that a much wider assortment of seeds, nuts, berries and roots were available to the Indians and were undoubtedly used by them. For example, hazelnuts are mentioned as being eaten with salmon as part of a river side meal (Hines 1851), and with camas in one of the villages along the Umpqua River (Douglas 1959). Sugar pine nuts were gathered, dried, and pounded into flour or eaten whole (Douglas 1959:231).

SETTLEMENT-SUBSISTENCE MODELS

Complementary settlement-subsistence models have been proposed for the aboriginal inhabitants of the Umpqua Basin (cf. Hanes 1977:5-8; Simmons 1985:3.2-3.5). Both of these models are ecologically oriented and entail the seasonal movement of people which, depending upon assumptions dealing with the relative abundance of local resources, may have been substantial or not.

According to Simmons, winter villages were located adjacent to the river and its principal tributaries, and were occupied during the winter months. With the coming of spring, temporary camps were established from which camas, berries, and game might be procured. From July through September, small upland camps were occupied. During these summer and early fall months, a wide variety of resources were available including camas, tarweed seed, sugar pine nuts, acorns, berries, insects, water fowl, and large and small game. According to this model, temporary fishing camps were occupied during October and November. In December the Indians retreated to their winter village, where collected foods had been stored (Simmons 1985:3.2-3.5).

Hanes notes that winter villages were located in the valley lowlands in regions where the distribution of major resources co-occur during the fall months. These major resources include acorns, camas, and fish. The latter two resources also occur in the spring. According to this model, the winter villages were probably not abandoned, but continued to be occupied by some portion of the patrilineal band during the entire year. Small groups exploited the resources of the mountainous upland regions of the basin during the summer. These resources would have included berries and terrestrial game (Hanes 1977:5-8).

The eyewitness accounts of aboriginal life at the time of contact are important records of a cultural system that was soon to virtually vanish from the Umpqua Basin. While they provide some information regarding a number of subsistence practices of the Indians, missing from these accounts is information regarding such questions as inter- and intra-group relations, the structure and functioning of a winter village, the placement of villages in relation to resources, decision making and the seasonal round, and the stability of this cultural system over time. Archaeological investigation in the region assumes added importance as a method of reconstructing the lifeways of the basin's original inhabitants and addressing questions dealing with the antiquity of the cultural system described at contact.

CHAPTER 3

ARCHAEOLOGICAL BACKGROUND

> The archaeological needs of southwestern interior Oregon are of the most fundamental kind. Though the prehistory of no part of the state is fully understood, this region is clearly the least known of all. The archaeological sample is so small, and the chronology so vaguely defined, that problems of adaptation to environment, cultural change, and trade cannot be addressed in any but the most anecdotal fashion. The area remains Oregon's last archaeological frontier, even as it remained a historical frontier long after that stage had passed elsewhere (Aikens 1984:122).

Though Aikens' assessment of the state of southwest Oregon prehistory is still generally accurate, the results of recent excavations and syntheses in this region are beginning to draw back the veil. Presented below is a summary of archaeological investigations in the Umpqua Basin (Figure 3.1 and Table 3.1). Large-scale excavations are rare; most projects may be classified as "test excavations," where the cultural deposits are being assessed for, among other things, integrity, areal extent, time depth, and cultural affiliation.

LOWER UMPQUA BASIN

Investigations in the lower Umpqua Basin are limited to the excavation of a single archaeological site. The Umpqua/Eden Site (35DO83) was found to be a stratified, multicomponent site in the estuary of the Umpqua River approximately 5 km from the Pacific Ocean. Occupation began approximately 2900 years ago and it appears to have been used by small groups of people as a seasonal hunting, fishing and collecting camp. An intrusive feature is interpreted as a Late Period semi-subterranean plank house abandoned prior to white contact. Artifacts found to be most time sensitive were bone harpoon heads and stone projectile points. Regarding the harpoon heads, it is observed:

> From the characteristically large, unilaterally barbed, single piece harpoon of earlier time, later occupants displayed a clear preference for smaller, more delicate composite harpoons consisting of a long slender bone point which inserts into a socket formed by two barbed pieces. The latter were probably used primarily for fishing, rather than for hunting large sea mammals (Ross and Snyder 1986:89).

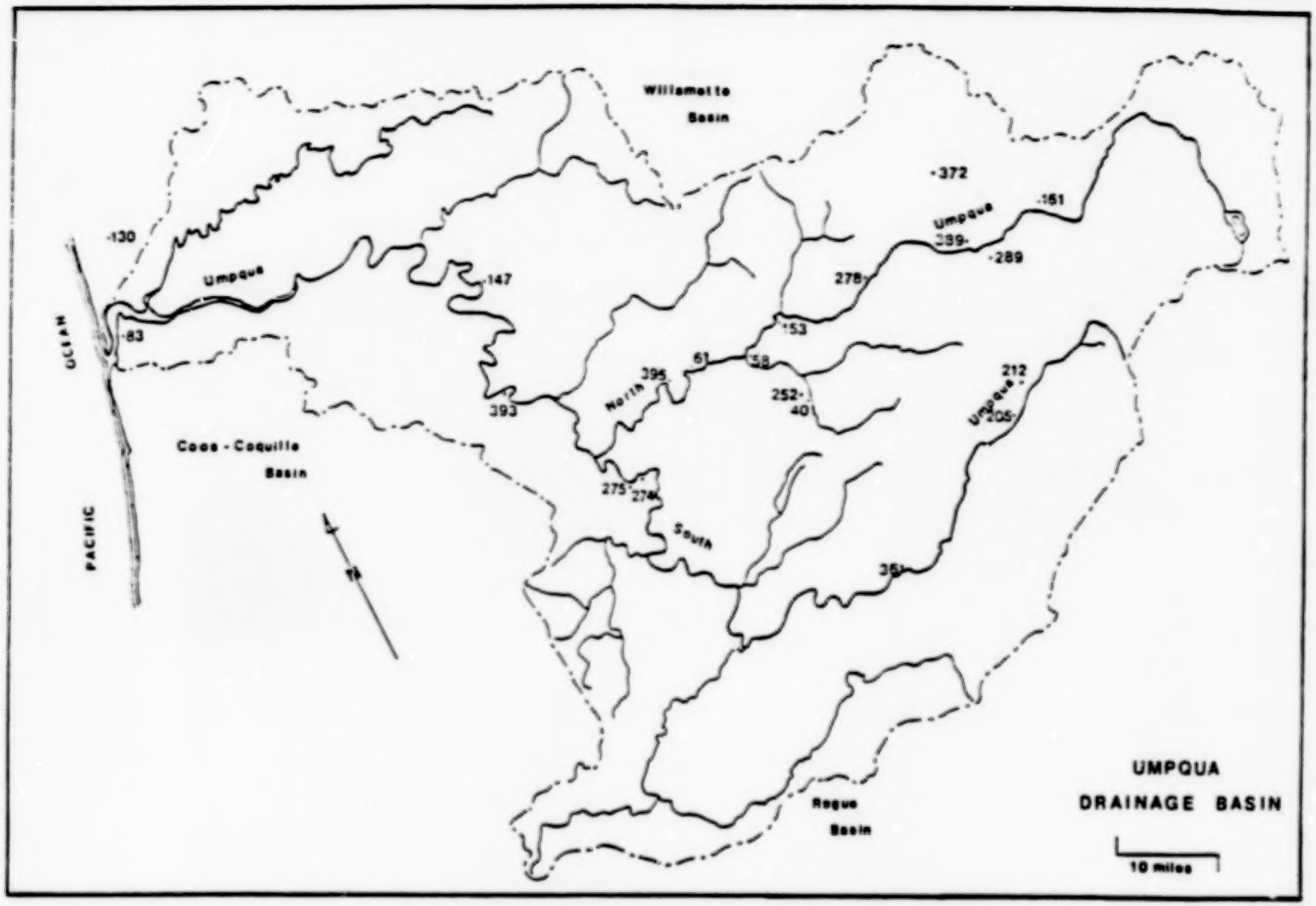

Figure 3.1. Location of Umpqua Basin sites mentioned in text are indicated by their Smithsonian numbers, without state (35) or county (DO) designations.

Table 3.1. Summary of archaeological investigations in the middle and upper Umpqua Basin.

Site Number	Site Name	Site Type	Reference
		Middle Umpqua Basin	
DO36	Crispen Ranch	Village	Baxter and Minor 1987
DO40	Cavitt Creek Falls	Fishing Camp	Snyder and Honey 1979
DO58	Glide Ranger Station	Village	Churchill and Jenkins 1985
DO61	Whistlers Bend	Midden	Connolly 1981
DO67	Winchester Bridge	Village	O'Neill 1989b
DO147	Martin Creek	Rockshelter	Corliss 1981b
DO153	Narrows	Fishery	Corliss 1981a
DO252	Gatchel	Village	Ottis and West 1984
DO274	Orchard	Village	Simmons and Gallagher 1985
DO275	Sylmon Valley School	Camp	Lyman 1985
DO393	Tyee Burial	Burial	O'Neill 1987
DO395	Grubbe Ranch	Camp	O'Neill 1989a
		Upper Umpqua Basin	
DO140	Skillet	Camp	Snyder 1981a
DO141	Jackques	Camp	Snyder 1981a
DO142	Southscape #1	Camp	Snyder 1981a
DO143	Southscape #2	Camp	Snyder 1981a
DO144	Mer	Camp	Snyder 1981a
DO145	Jewel	Camp	Snyder 1981a
DO146	Golden	Camp	Snyder 1981a
DO160	Muddy Timber Sale	Camp	Snyder 1981b
DO161	Medicine Creek	Camp	Snyder 1981c
DO205	South Umpqua Falls	Rockshelter	Minor 1983, 1987
DO209	Hughes I	Rockshelter	Keyser and Carlson 1987
DO212	Times Square	Rockshelter	Minor and Connolly 1987
DO216	Canton Creek	Camp	Brauner and Honey 1977
DO265	Apple Creek	Camp	S. Berryman 1987
DO278	Bogus Creek	Camp	Winthrop 1986, 1989
DO289	Little Oak Flats	Camp	J. Berryman 1987
DO372	Reynolds	Camp	Churchill 1986
DO389	Limpy Rock	Rockshelter	Baxter 1987
DO397	Shivigny East	Camp	O'Neill 1988a
DO400	Horseshoe #6	Camp	Spencer 1987
DO408	Calf Ridge	Camp	Baxter 1988

Five lithic projectile point types are grouped into three periods. The first period, associated with the "early midden" and a radiocarbon date of 2960 ± 45 BP, contains a projectile point described as a "large, relatively crude point with convex blade edges, rounded shoulders, slightly contracting stem and round base." Associated with the middle period temporary camps are "small barbed or shouldered points with contracting stems and small, bi-pointed specimens." Late period points, associated with the later midden, are "small, long barbed, contracting stemmed specimens and triangular points with a strong concave base" (Ross and Snyder 1986:92).

At the time of excavation, 1978 through 1980, the Umpqua/Eden Site provided the earliest evidence for occupation of the Oregon Coast. Since then, investigations at the Tahkenitch Landing Site (35DO130), a prehistoric shell midden situated on a freshwater lake approximately seven miles north of Umpqua/Eden, have extended the temporal span of occupation of the coastal region to approximately 8000 years ago (Minor and Toepel 1986).

Three cultural components have been identified and radiometrically dated at Tahkenitch Landing. Tahkenitch I, which dates from approximately 8000 to 5200 years ago, is interpreted to have been a summer fishing camp adjacent to a deep-water bay where the hunting of birds and mammals also provided a major source of subsistence. Intensive use of mollusks began during Tahkenitch II, which dates from 5200 to 3000 years ago. It is suggested that the local environment changed to a shallow-water estuary, providing favorable conditions for these invertebrates. The researchers believe the amount and variety of cultural debris associated with this period is sufficient to suggest the presence of an aboriginal village. Environmental changes continued and Tahkenitch III, which dates from 3000 to 130 years ago, is characterized by a sudden decrease in molluscan remains. It is during this time that it became a freshwater lake exploited seasonally as a summer fishing camp (Minor and Toepel 1986).

MIDDLE UMPQUA BASIN

Along the main stem of the Umpqua River in the middle basin region, only one site other than the Martin Creek Site has been excavated. The second site to be excavated in this region is a human burial found eroding from the bank of the Umpqua River. The Tyee Burial Site (35DO393), with two radiocarbon dates of approximately 500 BP (Table 3.2), is represented by the remains of a 20 to 25 year old male. Placed in a prepared, basin-shaped pit in a flexed position, these remains were accompanied by a ground slate club that had been broken in half prior to burial. Though an extensive site is recorded a short distance downstream from 35DO393, the burial appears to be an isolated cultural feature (O'Neill 1987).

The earliest recorded work conducted in the middle Umpqua Basin is a small test excavation on Rock Creek, a tributary of the North Umpqua River and a short distance upstream from the Narrows Site (Stafford and Voget 1936). Fifteen projectile points, all leaf-shaped bipoints, were recovered from one test pit of approximately .5 foot in depth. The site remains to be relocated.

Table 3.2. Summary of radiocarbon dates in the Umpqua Basin.

Site Number	Site Name	Date BP	Reference
35DO36	Crispen Ranch	620 ± 60	Baxter/Minor 1987
35DO83	Umpqua/Eden	2960 ± 45	Ross/Snyder 1986
35DO205-1	South Umpqua Falls	600 ± 50	Minor 1987
35DO205-2		3190 ± 50	
35DO209	Hughes I Rockshelter	1025 ± 110	Keyser/Carlson 1987
35DO212	Times Square Shelter	2690 ± 60	Minor/Connolly 1987
35DO372	Reynolds	2800 ± 60	Churchill 1986
35DO389	Limpy Rock Shelter	430 ± 60	Baxter 1987
35DO393	Tyee Burial	450 ± 60 570 ± 90	O'Neill 1987

Other than the Rock Creek and Narrows sites, the latter of which will be discussed in greater detail in Part III, six sites have been tested along the North Umpqua River and its tributaries in the middle Umpqua Basin.

Archaeological investigations at the Winchester Bridge Site (35DO67) by the Oregon State Museum of Anthropology determined that intact cultural deposits remained in this greatly disturbed area (O'Neill 1989b). Attested to have been a winter village site by local historians and early settlers, large numbers of artifacts have been recovered in the vicinity. Human burials are also known to have been found. The investigations conducted by the museum revealed that two stratigraphically distinct cultural components are extant. The artifacts recovered included cryptocrystalline silicate (CCS) and basalt waste flakes, biface and uniface fragments, a chopper, a ground mano/anvil stone, and several pieces of baked clay. Faunal material collected from the prehistoric deposits includes mussel shell fragments and calcined bone. No diagnostic artifacts were recovered.

The Grubbe Ranch Site (35DO395) is a multicomponent site containing chipped and ground stone tools (O'Neill 1989a). A collection of the latter, donated to the Oregon State Museum of Anthropology, included a number of stone bowl mortars and pestles. A cobble-filled oven containing mussel shell and charred branches was excavated adjacent to the bank of the river. Interpreted as a mussel steaming/baking oven, features of this type would help account for shell middens reported in the vicinity but which were washed away during the 1964 flood (Henbest 1984).

Opposite Whistler's Bend on the North Umpqua, Connolly (1981) conducted test excavations of site 35DO61. This large site, occupying a riverside terrace, has deep stratified cultural deposits which contain chipped and ground stone tools. While no buried diagnostic materials were recovered during the limited subsurface testing at this site, one Coquille Series type projectile point was found on the surface (Thomas Connolly, pers. com.).

At the confluence of the North Umpqua and Little rivers lies the Glide Ranger Station Site (35DO58). Test excavations at this site (Barner 1979; Churchill and Jenkins 1985) produced an artifact assemblage containing a large variety of tool types and a high density of cultural material. Interpreted as a semi-permanent camp employed over a long period of time and believed to have been first occupied between 3,000 to 5,000 years ago, site 35DO58 contains two components identified on the basis of varying debitage density and associated projectile point types. Projectile points of the lower component are broad-stemmed varieties and one resembling a Northern Side-notched. Recovered from the upper component were corner- and side-notched projectile points (Churchill and Jenkins 1985:40-41). Barbed and tanged projectile points have reportedly been found during earth moving operations at this site (Vance Carlson, pers. com.).

The Gatchel Site (35DO252) is situated at the confluence of Cavitt and McKay creeks approximately 3.5 miles southeast of Glide. Interpreted as a semi-permanent occupation site with probable house floors, a bisque-lined fire pit, and a segment of burned planking, the recovered artifacts included a wide variety of chipped and ground stone tools. Among the latter are fragments of stone bowl mortars, a pestle, and an adze blade. Small, foliate-shaped projectile points and an atlatl weight fragment are included in the assemblage. It was thought that the site was occupied during the past 1,000 years (Ottis and West 1984).

Approximately 0.5 mile upstream from the Gatchel Site is the Cavitt Creek Falls Site (35DO40). Test excavations at this site recovered a substantial amount of lithic debris and a few finished tools. While no diagnostic artifacts were collected, it was interpreted to be a special use site, the occupants of which may have been taking advantage of the anadromous fish runs (Snyder and Honey 1979). As a special use site it may be associated with the semi-permanent Gatchel Site, as Ottis and West propose (1984:38).

Along the South Umpqua River two sites have been excavated within the Roseburg city limits. Test excavations at the Orchard Site (35DO274) suggest that "the site may have been used as a winter village" (Simmons and Gallagher 1985:5.8) and, based upon projectile point types recovered at the site, may be "tentatively dated to approximately 4,000 BP through 500 BP" with "an older component dating to the Cascade Phase 8,000 - 4,000 BP." It has been argued elsewhere that Cascade-like points used by Simmons and Gallagher to hypothesize an early occupation for the Orchard Site may have been a long-lived point style with a heretofore unrecognized extended range of temporal occurrence (Connolly 1986; Connolly and Baxter 1986).

The Sylmon Valley School Site (35DO275), also within Roseburg, was determined to have been a seasonal food processing camp occupied during the non-winter months. Comparison of the projectile points with those recovered elsewhere in southwestern Oregon suggests a temporal range between 1500 and 500 BP (Lyman, ed., 1985).

Approximately three miles downstream from the community of Tiller on the South Umpqua River, test excavations at the Crispen Ranch Site (35DO36) coupled with ethnographic information indicated that this area was used as a village (Baxter and Minor 1987:55-56). Two components were identified. The more recent of these, with a radiocarbon date of 620 ± 60 BP, was associated with narrow-necked projectile points. The earlier component contained broad-necked points which "indicate occupation at least as early as 2000 years ago, and perhaps as long as 5000 years ago" (Baxter and Minor 1987:56).

UPPER UMPQUA BASIN

A number of sites have been tested in the forested uplands of the upper Umpqua River drainage. These test excavations have generally been the result of Bureau of Land Management or Forest Service cultural resource management projects. Presented here are a sample of the most informative studies.

Archaeological testing at Limpy Rock Shelter (35DO389) determined the site to be a Late Archaic hunting camp, the artifact assemblage dominated by projectile points. These were most commonly small side-notched and narrow-necked varieties, with at least one Gunther Barbed specimen. A radiocarbon date of 430 ± 60 BP was returned on charcoal collected from the base of the deposit (Baxter 1987).

Along Steamboat Creek, a tributary of the North Umpqua River, excavations at the Reynolds Site (35DO372) reveal that this area was used as a seasonal hunting camp. The artifact assemblage is dominated by chipped stone tools and flaking debris. The five projectile points, which include foliate and broad-necked varieties, are consistent with the radiocarbon date of 2800 ± 60 BP returned on charcoal collected from the middle of the cultural deposit (Churchill 1986).

The Little Oak Flats Site (35DO289), overlooking the North Umpqua River at an elevation of 3,200 feet, contains an artifact assemblage limited to chipped stone tools and flaking debris. No ground stone tools were found. The absence of such tools, and features such as fire pits, suggests that the site was a seasonal hunting camp. A Gunther series projectile point recovered from the site indicates a recent occupation, perhaps "after 1600 AD" (Berryman 1987:29).

Situated at the confluence of Bogus Creek and the North Umpqua River, the Bogus Creek Site (35DO278) yielded cultural materials suggesting its occupation by small groups of people "during the post-Mazama period." Flaked stone tools included projectile points, scrapers, utilized flakes, and cores. Two projectile points are thought to have been associated with atlatl technology and two with the bow and arrow. The artifact assemblage suggests the site's use as a hunting camp (Winthrop 1986, 1989).

The Medicine Creek Site (35DO161) is a multicomponent site near the headwaters of the North Umpqua River. Below a lens of Mazama ash, which could date the site to approximately 6700 years ago, was an artifact assemblage that included foliate and broad-stemmed projectile points. Within and above the ash lens were "several barbed and/or stemmed points ...(which) resemble types recovered from sites occupied as early as 4000 to 5000 years in the Northern Great Basin, Southern Plateau, and Klamath areas" (Snyder 1981c).

South Umpqua Falls Rockshelters (35DO205) is situated above the South Umpqua River. Two rockshelters were found to contain evidence of their use as temporary, seasonally occupied hunting and fishing camps. Lanceolate, side-notched, and barbed projectile points were recovered from Rockshelter #1, which had a radiocarbon date of 600 ± 50 BP. The faunal remains from this shelter included large and small animals as well as fish. Also recovered was a bone artifact interpreted to be a fish lure. The artifact assemblage from Rockshelter #2, with a radiocarbon date of 3190 ± 50 BP, was dominated by broad-necked and lanceolate varieties. Neither rockshelter contained evidence of vegetal processing activities (Minor 1983, 1987).

Hughes I Rockshelter (35DO209) is located approximately 1.5 miles southeast of South Umpqua Falls on a small tributary of the South Umpqua River. Within the rockshelter were discovered cultural deposits approximately 190 cm in depth. Tools recovered from the excavations included projectile points, knives, scrapters, a mano and grinding slab, and an antler wedge. The identifiable faunal remains collected represented deer, elk, and rabbit. A radiocarbon date of 1025 ± 110 BP is associated with narrow-necked corner-notched projectile points of the upper levels. The lower deposits, which contained foliate-shaped and broad-necked stemmed points, remain undated (Keyser and Carlson 1987).

Times Square Rockshelter (35DO212) is located upstream from 35DO205 and on a tributary of the South Umpqua River. The cultural deposits and associated radiocarbon date of 2690 ± 60 BP indicate that the site was occupied during the Middle and Late Archaic periods by small groups of hunters. The date is associated with broad-necked projectile points; narrow-necked and Gunther Barbed projectile points occur stratigraphically higher. Perishable artifacts from the site include wood, cordage, and fiber bundles (Minor and Connolly 1987).

The pace of archaeological investigation has increased in recent years (see Table 3.1), due in large part to laws regarding the management of cultural resources on government land and their possible disturbance by activities associated with the timber industry. Lacking in the Umpqua Basin has been an independent cultural chronology that might help to organize the data being recovered. It is hoped that the analysis presented in Part IV of this report begins to address that concern.

PART II

THE NARROWS SITE (35DO153): A MIDDLE AND LATE ARCHAIC FISHERY

CHAPTER 4

EXCAVATION PROCEDURES AND RESULTS

Test excavations at the Narrows Site were conducted in 1981, 1986 and 1987. The following is a narrative of those excavations and a presentation of the results.

SITE SETTING

The Narrows Site is located approximately 1 km downstream from the confluence of Rock Creek and the North Umpqua River at an elevation of 240 m above sea level on land administered by the Bureau of Land Management (Figure 4.1). At this point and upstream from the site, the river flows through steep canyons cut into the Western Cascade Mountains. A short distance downstream from the site, in the vicinity of the small community of Idleyld Park, the canyon widens, though the river is still deeply entrenched. Farther downstream and beginning at river mile 32, northeast of Glide, a developed flood plain is present with a series of terraces rising upward to the hills overlooking the river.

The Narrows Site, named for the constricted natural chute through which the river flows (Figure 4.2), is located on a lower terrace on the south side of the North Umpqua River. A steep wooded slope rises to the east above the site to an elevation of approximately 360 m. Narrow benches, or terraces, mark the descent of this slope to the river bank. A well-worn path used by local fishermen to descend the slope currently makes access to the site area relatively easy, though it is fair to call any visit to the Narrows Site "a hike."

Geologically, the site is located within the Western Cascade Province (Baldwin 1981; Franklin and Dyrness 1973). The transition from mountain to flood plain topography, briefly outlined above, reflects the change in underlying geological conditions. To the west are Mesozoic age (225-65 million years ago) sedimentary and volcanic deposits, while to the east are early Cenezoic age (54-26 million years ago) volcanic and continental sedimentary rocks (Baldwin 1981:8-9). Volcanism in the region during the Oligocene and Miocene epochs produced deposits of basalts, andesites and pyroclastic rocks. The latter include tuffs, breccias, and agglomerates (Franklin and Dyrness 1973:24). The gravel bars of the North Umpqua River contain cobbles of basalt, andesite and cryptocrystalline silicates (CCS). Though the local occurrence of obsidian is undocumented (c.f. Skinner 1983), tools and waste flakes from archaeological sites in the region indicate that aboriginal groups had access to this material, perhaps through trade.

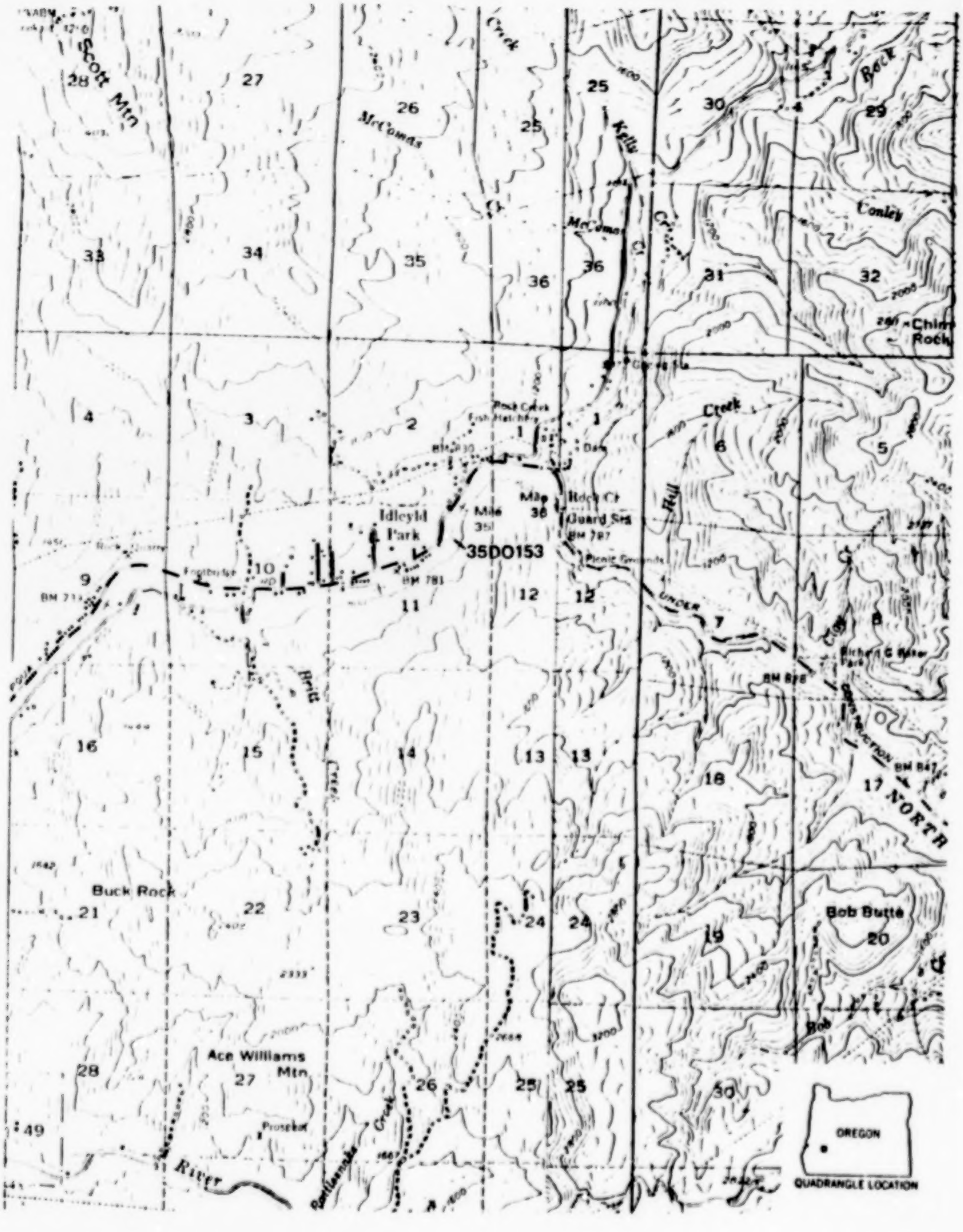

Figure 4.1. Topographic setting of the Narrows Site (35DO153) in Douglas County, Oregon (from USGS Glide and Mace Mtn. 15' quads).

Table 4.1. List of plants in the vicinity of the Narrows Site.

Trees

Abies grandis	Grand Fir
Acer macrophyllum	Big-leaf maple
Alnus rubra	Red Alder
Arbutus menziesii	Pacific Madrone
Calocedrus decurrens	Incense Cedar
Fraxinus latifolia	Oregon Ash
Pinus lambertiana	Sugar Pine
Pseudotsuga menziesii	Douglas Fir
Quercus garryana	White Oak
Quercus kelloggii	Kellogg's Oak

Shrubs

Amelanchier alnifolia	Western Serviceberry
Berberis aquifolium	Shining Oregon grape
Ceanothus integerrimus	Deerbrush
Corylus cornuta	Hazelnut
**Cytisus scoparius*	Scotch Broom
Holodiscus discolor	Creambush Ocean-spray
Rhus diversiloba	Poison Oak
Rubus ursinus	Pacific Blackberry
Salix sp.	Willow
Symphoricarpos albus	Common Snowberry

Grasses and Forbs

**Achillea millefolium*	Common Yarrow
Adenocaulon bicolor	Pathfinder
Aira caryophyllea	Silver Hairgrass
Artemisia douglasiana	Douglas' Sagebrush
Brodiaea congesta	Congested Brodiaea
Bromus carinatus	California Brome-grass
Bromus vulgaris	Narrow-flowered Brome-grass
**Chrysanthemum leucanthemum*	Oxeye-daisy
Collomia heterophylla	Varied-leaf Collomia
Cynoglossum grande	Pacific Hound's Tongue
**Cynosurus echinatus*	Crested Dog's-tail Grass
**Dactylis glomerata*	Orchard-grass
Dryopteris arguta	Coastal Shield-fern
Erigeron foliosus	Leafy Erigeron
Eriophyllum lanatum	Woolly Sunflower
Festuca megalura	Foxtail Fescue
Fragaria vesca	Woods Strawberry
Galium aparine	Goose-grass
Goodyera oblongifolia	Western Rattlesnake-plantain
Hieracium albiflorum	White-flowered Hawkweed
**Hypericum perforatum*	Common St. John's-wort
**Hypochaeris radicata*	Hairy Cats-ear
Iris tenax	Oregon Iris
**Lathyrus latifolius*	Everlasting Peavine
Ligusticum apiifolium	Celery-leaved Lovage
Lomatium hallii	Hall's Lomatium
Lomatium nudicaule	Barestem Lomatium
Lotus micranthus	Small-flowered Deervetch
Lotus pinnatus	Meadow Deervetch
Melica subulata	Alaska Oniongrass
Mimulus guttatus	Yellow Monkey-flower
Montia parvifolia	Narrowleaved Montia
Montia sibirica	Siberian Montia
Osmorhiza chilensis	Mountain Sweet-root
Oxalis suksdorfii	Western Yellow Oxalis
Panicum occidentale	Western Witchgrass
Pityrogramma triangularis	Gold-back Fern
Polypodium hesperium	Licorice-fern
Polystichum munitum	Common Sword-fern
Potentilla glandulosa	Sticky Cinquefoil
Psoralea physodes	California-tea
Sanicula crassicaulis	Pacific Sanicle
Satureja douglasii	Yerba Buena
**Senecio jacobaea*	Tansy Ragwort
Sidalcea virgata	Rose Checker-mallow
Silene hookeri	Hookers's Silene
Synthyris reniformis	Snow Queen
**Torilis arvensis*	Field Hedge-parsley
Trientalis latifolia	Western Starflower
**Trifolium dubium*	Least Hop Clover
Trifolium eriocephalum	Woolly-head Clover
Trifolium tridentatum	Sand Clover
Vicia americana	American Vetch
**Vica sativa*	Common Vetch
Viola sp.	Violet
Whipplea modesta	Whipplevine
Lonicera hispidula	California Honeysuckle

* indicates introduced species

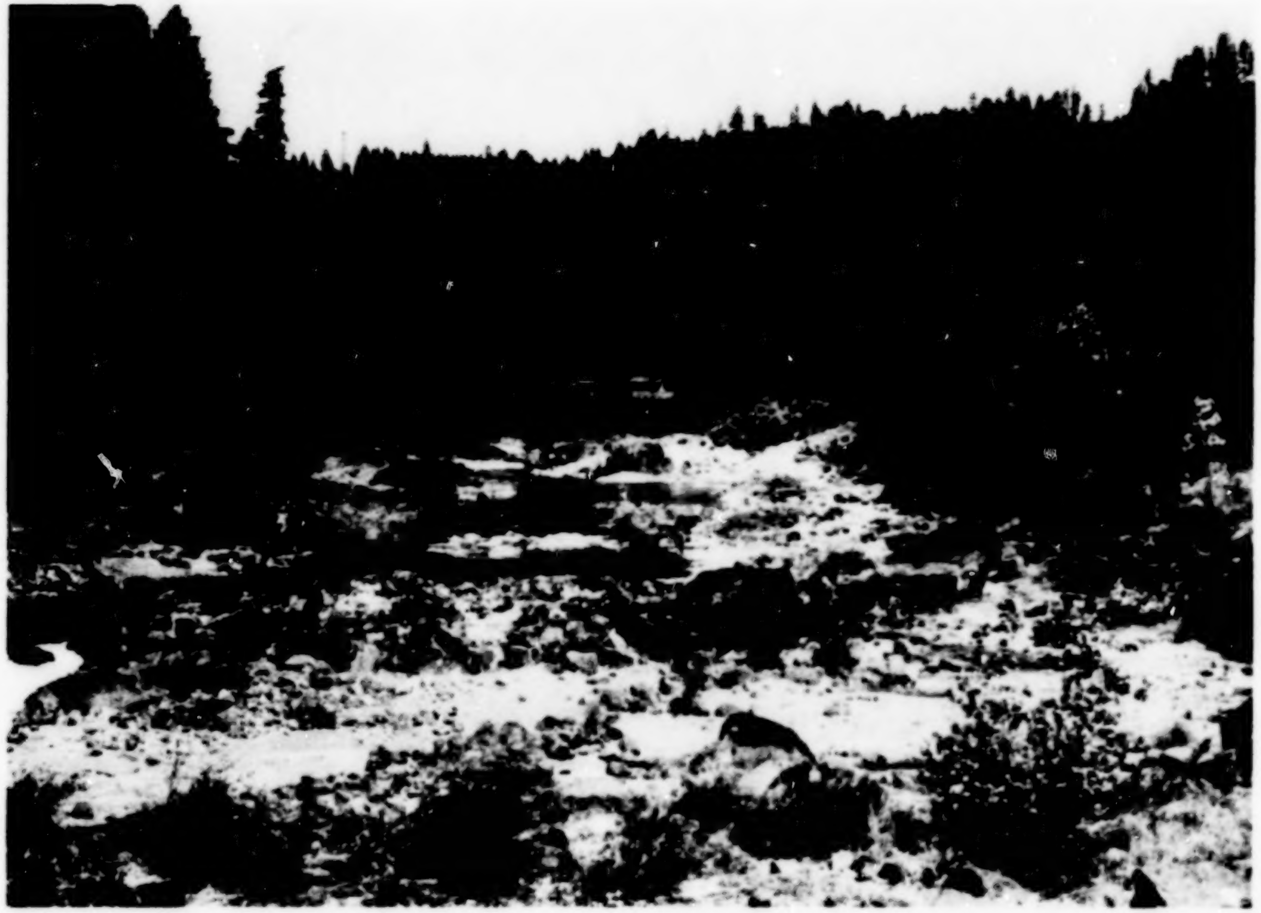

Figure 4.2. General view upstream, to east, of the Narrows on the North Umpqua River. The spot pictured is a popular present-day fishery. The aboriginal camp lies on the south bank.

The soils at the Narrows Site have been identified as belonging to the Orford Series, a Haplohumult (Hutchison, personal communication). In general, Haplohumults are soils formed in temperate climates that are low in bases, have a rich content of organic matter, and a relatively thin accumulation of clay in a subsurface horizon (Franklin and Dyrness 1973:346). Orford Gravelly Loam is found on mountainsides and benches of 3-30 per cent slope, is well-drained, and is formed in colluvium and residium from ash-flow tuffs and various extrusive rocks (USDA 1983).

The vegetation in the vicinity of the Narrows Site is summarized in Table 4.1 (Holmes 1986a). The site lies within the forested Tsuga heterophylla Zone (Franklin and Dyrness 1973:44-45) though the Interior Valley Zone lies only a short distance to the west. The vegetational situation reflects the geological setting. It may be reasonably said that 35DO153 is situated at an ecotone, a transitional zone between two ecological units which are each characterized by their own sets of climatic parameters and floral/faunal associations (Moran 1982). Within an ecotone there is a gradation between zones, not a sharp division, and members of each ecological unit will be present. The relevance of this to the prehistoric occupants of the Narrows Site is obvious--the resources of the forest and the valley, not to mention the river, would have all been available for exploitation.

1981 FIELD SEASON

In April 1981 it was discovered that a series of small pits had been excavated within the site area. This discovery prompted Corliss (1981a) to suggest a plan to protect the cultural resources of 35DO153 that included the posting of signs and conducting more frequent visits to the site. His recommendations also included the provision that test excavations be conducted if vandalism continued. Unsanctioned excavation did continue, and Corliss returned to the Narrows Site in May of 1981 with a field crew of cultural resource technician trainees in order to conduct test excavations.

The subsurface investigations conducted by Corliss included the excavation of two 1 x 2 meter test pits (TP). A reconstruction of these tests from photographs and level bag notes (O'Neill 1986) indicates that the site was gridded and that the test pits were off-set and separated one from the other by two meters (Figure 4.3). The test pits were placed to the south of a well-worn path that leads from the summit of the ridge overlooking the site to the river below. The photographs indicate that fill from the test pits was screened through hardware cloth and that the pits may have been excavated in 20 cm levels.

TP-1, the southern unit, appears to have been situated on a slope, with the southern half higher in elevation than the northern half (the level bag for Level 1 includes the notation "south 1/2 only"). Recovered from the two excavation levels were a CCS core, four pieces of bone, and 196 pieces of lithic debitage. No cultural features or charcoal were noted.

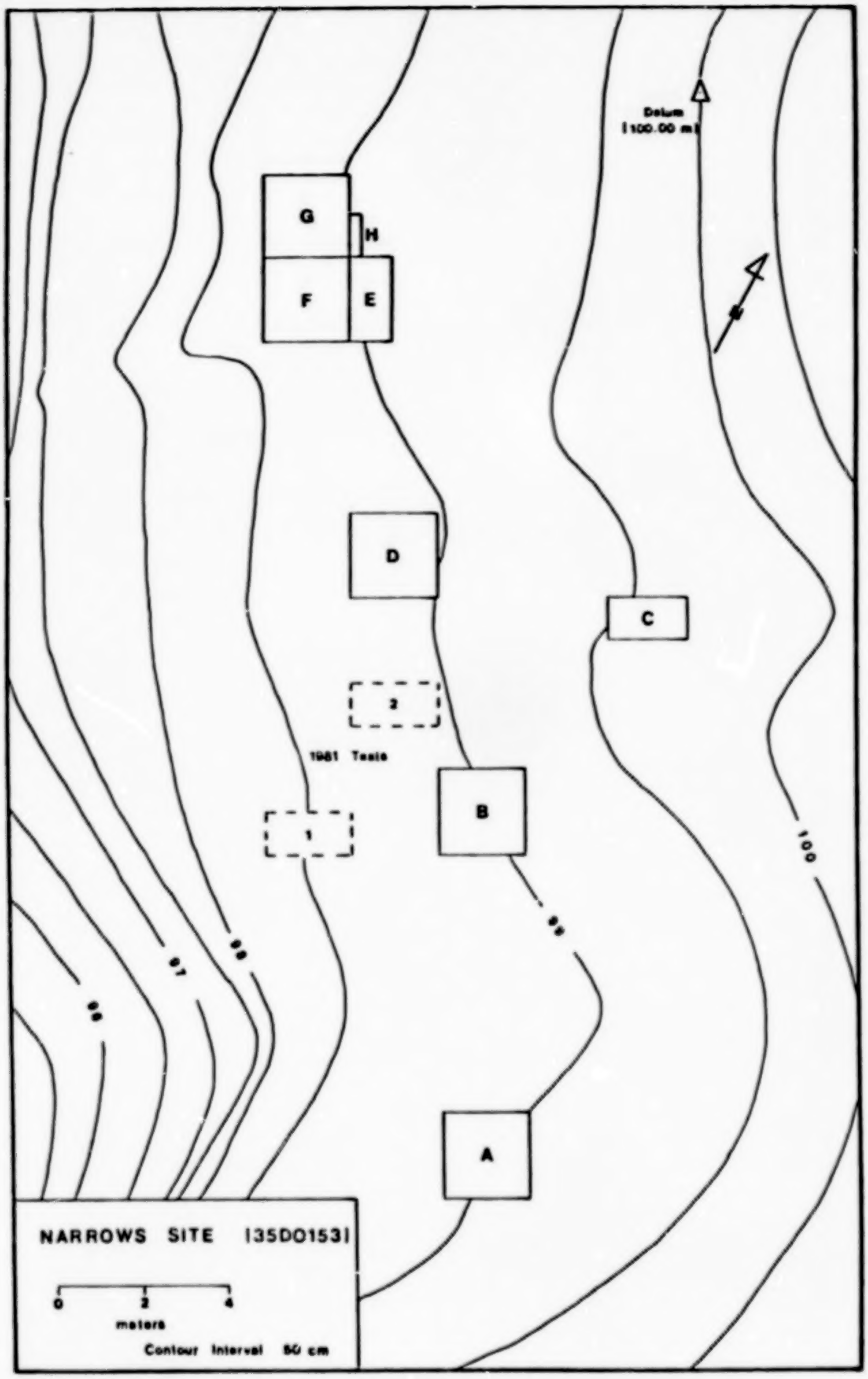

Figure 4.3. Narrows Site excavation; 1981, 1986, and 1987.

One (20 cm?) level was excavated in TP-2 and 198 pieces of lithic debitage were collected. No bone or formed tools were reported or included in the level bag. Likewise, no cultural features were noted.

Surface collection of the site was apparently another activity undertaken during the 1981 testing. Included in the assemblage from this site is a bag labeled "surface collection", an unprovenienced bag labeled only "35DO153", and a set of unprovenienced formed tools. Among the artifacts included in the last group are:

a) one contracting stem, barbed and serrated projectile point of grey CCS which may have come from the surface;
b) one uncompleted CCS biface;
c) two stone bowl mortar fragments, one of which is a rim; and
d) one medial section of a cylindrical pestle.

Corliss (1981a) estimated that the site covered an area of approximately 960 square meters and, though the depth of the cultural deposit was not determined, felt that the site was shallow (Carlson, pers. com.).

A review of the 1981 test excavation records and recovered material remains (O'Neill 1986) suggested that the site contained evidence of a variety of prehistoric activities, including stone tool manufacturing and repair, fishing and/or hunting, food processing, and wood- and/or hide-working. Furthermore, a single Gunther Barbed-like projectile point indicated a Late Archaic occupation.

1986 AND 1987 FIELD SEASONS

Prompted by continued vandalism to the site, the BLM sponsored three additional projects at 35DO153. The first of these, undertaken between June 24 and July 18, 1986, was conducted through a cooperative agreement between the Roseburg District BLM, the Oregon State Museum of Anthropology at the University of Oregon, and Umpqua Community College of Roseburg. The purpose of this work was to confirm Corliss' 1981 test results, and to recover a more representative sample of the cultural deposits contained at the site in order to design a comprehensive management plan. The field crew included Umpqua Community College archaeology field school students, BLM cultural resource technicians, and volunteers from the Rogue Valley Archaeological Society. This mix of participants, most of whom were being introduced to excavation techniques, meant that work proceeded slowly. Furthermore, the number of participants fluctuated day-to-day, according to BLM participants' other regular duties and their involvement in fighting the severe wild fires of 1986, and for UCC students, illness.

On April 24 through 26, 1987, a group of volunteers from the Oregon State Museum of Anthropology and BLM returned to the site to excavate a human burial that had been discovered but not excavated during the 1986 season. The intervening period had allowed sufficient time for the BLM to consult with the Sacred Lands Committee of the Siletz Tribe and the Cow Creek Band of Umpqua

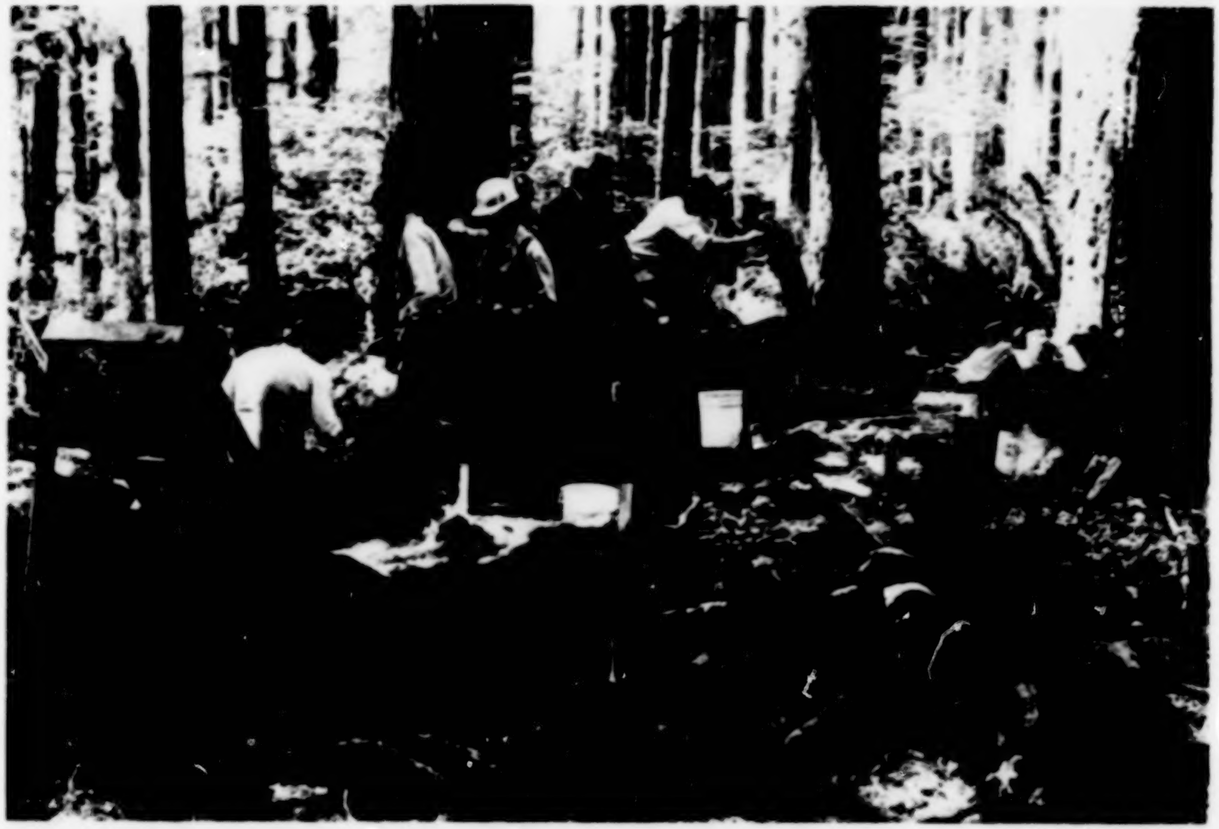

Figure 4.4. Work in progress at 35DO153. The 1986 excavation of the midden found in TPs E, F and G at the north end of the tested area.

Tribe of Indians regarding the removal of the aboriginal burial. Preliminary analysis of the 1986 testing also indicated that these excavations had been terminated prematurely. Not only was there a substantial amount of cultural material present in those levels at which work was stopped, but the type of material suggested the presence of an older component that had only been marginally sampled (O'Neill and Barner 1987). While the human burial was being removed, a test probe was excavated adjacent to the burial pit to determine the depth of the cultural deposits at the site.

Vandalism continued at the Narrows Site in the form of shallow pits dug in the site area and prompted the third project. Conducted between July 6 through 23, 1987, this work entailed the removal of the overburden from those test pits begun the year before and the excavation of the lower cultural deposits. The field crew for this three week project consisted of BLM archaeologists.

The results of these three projects have been combined here because the excavations were conducted as a single effort, using similar recovery procedures in common test units with the same key individuals in charge.

At the beginning of the field season, the site area to the south of the path was gridded, incorporating the 1981 test excavation grid. A permanent metal datum was set in cement to the northeast of the grid and given an arbitrary elevation of 100 meters. A topographic map was subsequently generated, using a plane table and alidade. A total of 24.3 square meters (22.665 cubic meters) was excavated at the Narrows Site in the form of five 2 x 2 meter units, two 1 x 2 meter units, and one 1 x .3 meter unit (Figure 4.4). These test pits (TP) have been labeled, from south to north, A through H and each is divided into 1 x 1 meter units, or "quads" (Figure 4.3). For each 2x2 meter unit, Quad A is the northwest quad, Quad B the northeast, Quad C the southwest, and Quad D the southeast quad. The labeling convention used in this report gives the TP designation first, followed by the Quad. For example, "GC" is read as TP-G, Quad C. The choice of excavation unit size was, in large part, based upon the conclusion reached by Corliss that the site was shallow, as is typical of archaeological sites in forested settings.

Excavation proceeded in 10 cm levels and according to the natural soil stratigraphy when encountered. The fill of each unit was passed through 1/4 inch hardware cloth and all debitage, tools, and bones were collected for processing in the laboratory.

STRATIGRAPHY

The surface of the site is covered by an approximately 2-5 cm thick layer of duff composed of fir needles, leaves and moss. Four soil strata, the boundaries of which are generally quite subtle, were defined during the excavation of 35DO153 (Figure 4.5). One of these is discontinuous and limited to the northern portion of the tested area. The soil strata include:

Stratum I, which extends to 30 cm below the surface, is a discontinuous, loose, dark brown to black, charcoal-laden silt that occurs at the north end of the tested areas (TPs E through H). Small pieces of calcined bone, charcoal, and bisque are common, as is fire-cracked rock and gravel-sized pieces of angular basalt colluvium. The pH values of this stratum range from 5.6 to 5.8.

Stratum II, at the north end of the tested area, is found from 30 to approximately 50 cm below the surface as a grayish-brown silt overprinted by the charcoal-laden Stratum I. Elsewhere, it occurs from 0 to approximately 55 cm below the surface and is a medium brown silt within which large tree roots are found. Gravel-sized pieces of angular basalt colluvium are abundant. Rounded basalt cobbles, both modified and unmodified, occur as a lens at the interface of this stratum and Stratum III, and appear to follow the slope of the surface which is downward and to the west. This cobble lens is considered to be a cultural feature. The pH values of Stratum II range from 5.2 to 5.6.

Stratum III is a compact, reddish-brown clayey silt with a pH value of 4.8. It is found from 50 to approximately 100 cm below the surface. Rounded basalt cobbles are found in the upper levels of this stratum.

Stratum IV is a compact, mottled, yellowish-brown clayey silt containing some sand. It occurs at approximately 100 cm below the surface to at least 150 cm. Few rounded cobbles are found in this stratum, though fragmented and decomposing basalt does occur.

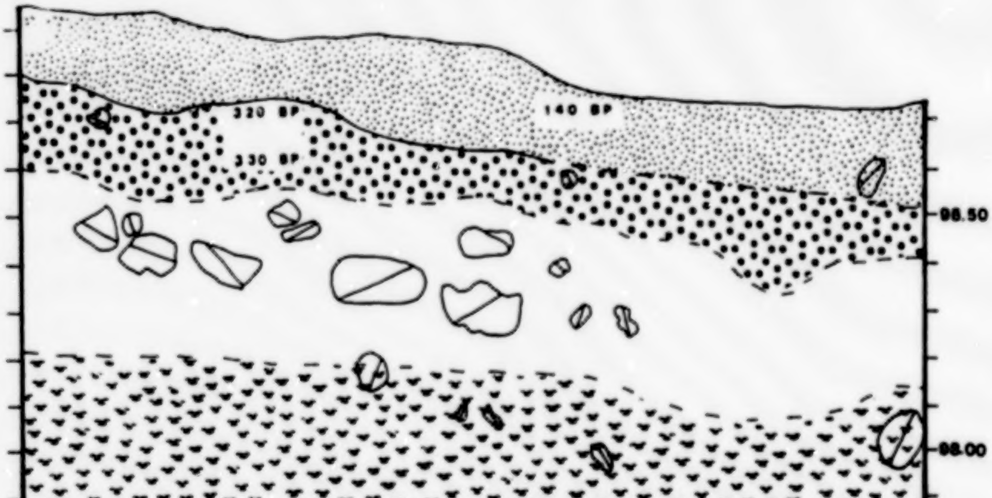

Figure 4.5. South profile of TP-F.

TEST PIT SUMMARY

TP-A, at the south end of the tested area, was placed in a shallow depression at the foot of the slope that rises upward to the south. Quad C was excavated to 70 cm, the other quads to 60 cm below the surface. Strata II and III are represented in the profiles of this test pit. While the majority of the cultural material recovered from this unit came from the upper three levels (Table 4.2), a minor peak in the density of cultural debris is found between 30 to 50 cm below the surface in Stratum III (Figure 4.6). No cultural features were noticed during the excavation of TP-A.

TP-B, situated between the 1981 test units excavated by Corliss, was placed adjacent to a large Douglas fir. Quad A was excavated to 140 cm below the surface, Quad C to 110 cm, and quads B and D to 80 cm. Strata II, III and IV are represented in the profiles of this test pit (Figure 4.7). Between 40 to 50 cm below the surface, fragments of two stone bowl mortars and a pestle were recovered along the east profile, all in close association. One of these stone bowl mortar fragments fits a fragment collected by Corliss. A radiocarbon assay on charcoal collected at this depth returned a date of 450 ± 70 BP (Beta 17815). The density of cultural material, summarized in Table 4.3, is quite high and there are two noticeable peaks in this density (Figure 4.8), one each in Stratum II and Stratum III. Stratum IV is virtually sterile, with only one basalt flake from Level 11 of Quad C. The cobble lens in TP-B appears to follow the surface contour and is lower to the west.

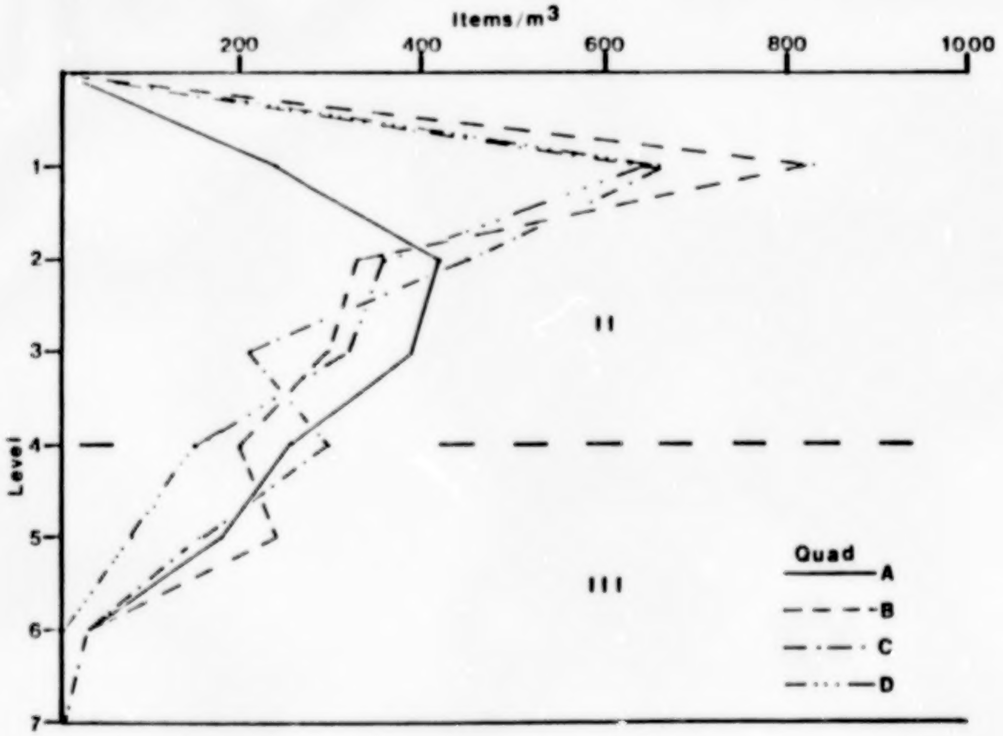

Figure 4.6. Vertical distribution of cultural material in TP-A.

Table 4.2. Summary of cultural material recovered from TP-A.

Unit/ Quad	Strat/ Level	Debitage			Tools			Total	Density items/m^3
		OBS	CCS	BAS	OBS	CCS	BAS		
AA	II / 1	1	21	1	-	1	-	24	240
	2	4	31	6	-	1	-	42	420
	3	1	26	11	-	1	-	39	390
	III/ 4	2	19	3	-	1	1	26	260
	5	1	13	4	-	-	-	18	180
	6	-	2	1	-	-	-	3	30
	Totals	9	112	26	0	4	1	152	
AB	II / 1	2	60	15	1	5	-	83	830
	2	1	27	5	-	-	-	33	330
	3	6	17	6	-	-	1	30	300
	4	2	12	2	1	1	2	20	200
	III/ 5	2	17	5	-	-	-	24	240
	6	-	2	-	-	1	-	3	30
	Totals	13	135	33	2	7	3	193	
AC	II / 1	8	52	4	-	2	-	66	660
	2	3	35	7	-	-	-	45	450
	3	1	13	7	-	-	-	21	210
	III/ 4	1	23	2	1	-	3	30	300
	5	1	14	1	-	-	-	16	160
	6	2	1	-	-	-	-	3	30
	7	-	-	-	-	-	-	0	0
	Totals	16	138	21	1	2	3	181	
AD	II / 1	6	49	7	-	3	-	65	650
	2	3	26	7	-	-	-	36	360
	3	4	21	4	-	1	2	32	320
	4	2	8	3	1	1	-	15	150
	III/ 5	1	5	-	-	2	-	8	80
	6	-	-	-	-	-	-	0	0
	Totals	16	109	21	1	7	2	156	

Key: OBS=obsidian; CCS=cryptocrystalline silicates; BAS=basalt

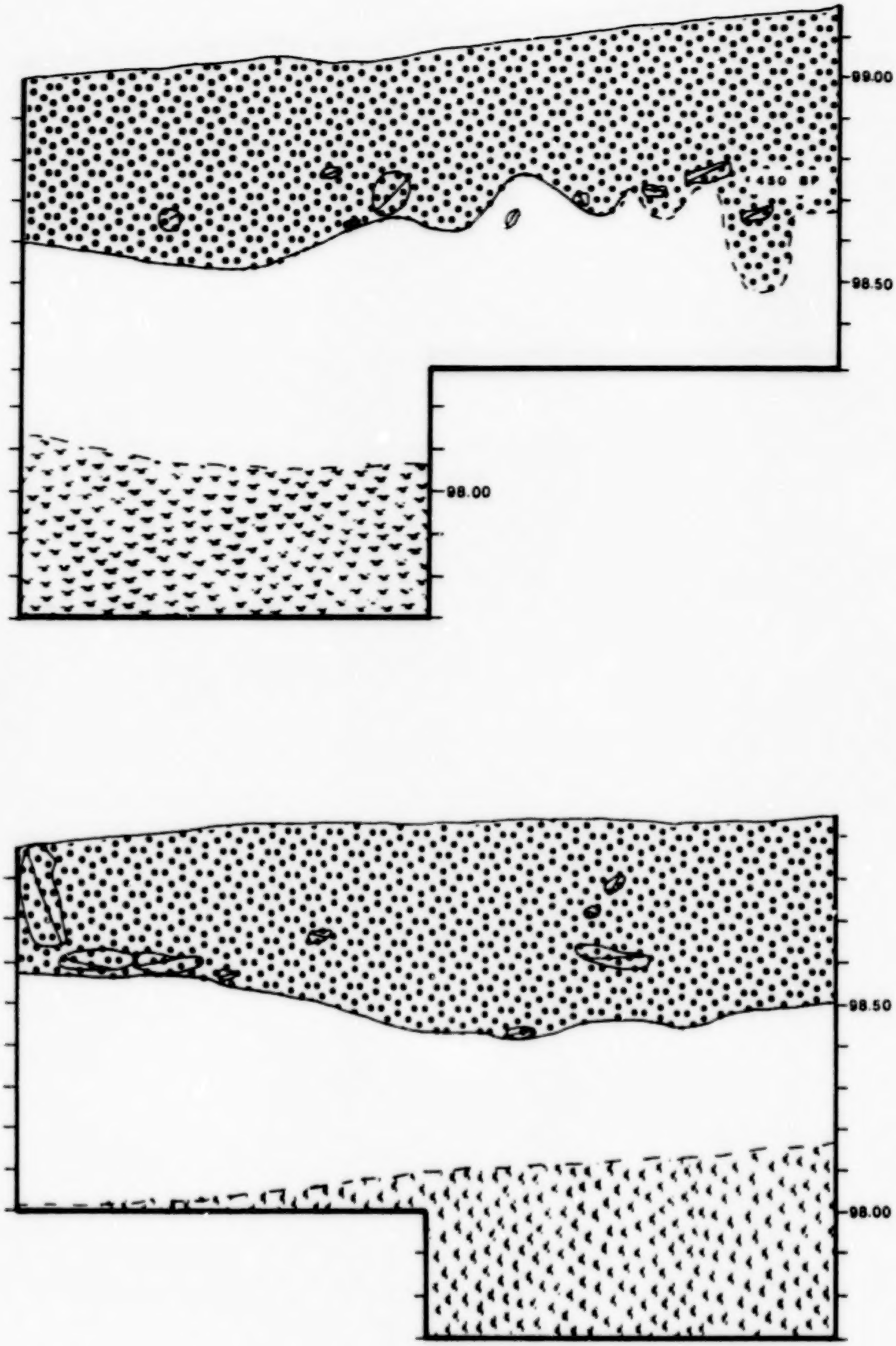

Figure 4.7. North (top) and west (bottom) profiles, TP-B.

Table 4.3. Summary of cultural material recovered from TP-B.

Unit/ Quad	Strat/ Level	Debitage			Tools			Total	Density items/m³
		OBS	CCS	BAS	OBS	CCS	BAS		
BA	II / 1	2	12	3	-	-	2	19	190
	2	6	29	7	1	3	-	46	460
	3	9	55	21	-	4	2	91	910
	4	8	38	19	-	1	2	68	680
	III/ 5	8	55	7	-	-	6	76	760
	6	5	92	16	1	3	1	118	1180
	7	6	57	12	-	3	-	78	780
	8	1	11	5	-	-	1	18	180
	9	-	3	-	-	-	-	3	30
	10	-	-	-	-	-	1	1	10
	IV /11	-	-	-	-	-	-	0	0
	12	-	-	-	-	-	-	0	0
	13	-	-	-	-	-	-	0	0
	14	-	-	-	-	-	-	0	0
	Totals	45	352	90	2	14	15	518	
BB	II / 1	5	39	8	-	1	-	53	530
	2	10	54	21	2	1	1	89	890
	3	4	31	9	-	1	-	45	450
	4	4	73	21	1	3	7	109	1090
	III/ 5	20	82	14	-	3	1	120	1200
	6	9	88	11	-	4	-	112	1120
	7	1	34	6	-	-	-	41	410
	8	-	1	1	-	-	-	2	20
	Totals	53	402	91	3	13	9	571	
BC	II / 1			pothunter's backdirt					
	2	2	19	11	-	-	1	33	330
	3	6	64	52	-	6	-	128	1280
	4	7	47	31	-	1	-	86	860
	III/ 5	13	53	9	2	3	2	82	820
	6	10	126	28	-	2	1	167	1670
	7	20	143	45	2	6	2	218	2180
	8	3	28	2	-	2	-	35	350
	9	-	3	-	-	-	-	3	30
	10	-	1	-	-	-	-	1	10
	IV /11	-	-	1	-	-	-	1	10
	Totals	61	484	179	4	20	6	754	
BD	II / 1	1	14	6	-	-	1	22	220
	2	11	53	11	-	1	1	77	770
	3	3	35	15	-	-	-	53	530
	4	4	48	7	1	2	-	62	620
	III/ 5	4	30	6	-	1	3	44	440
	6	5	51	14	-	-	2	72	720
	7	1	20	3	-	-	-	24	240
	8	1	6	1	-	-	-	8	80
	Totals	30	257	63	1	4	7	362	

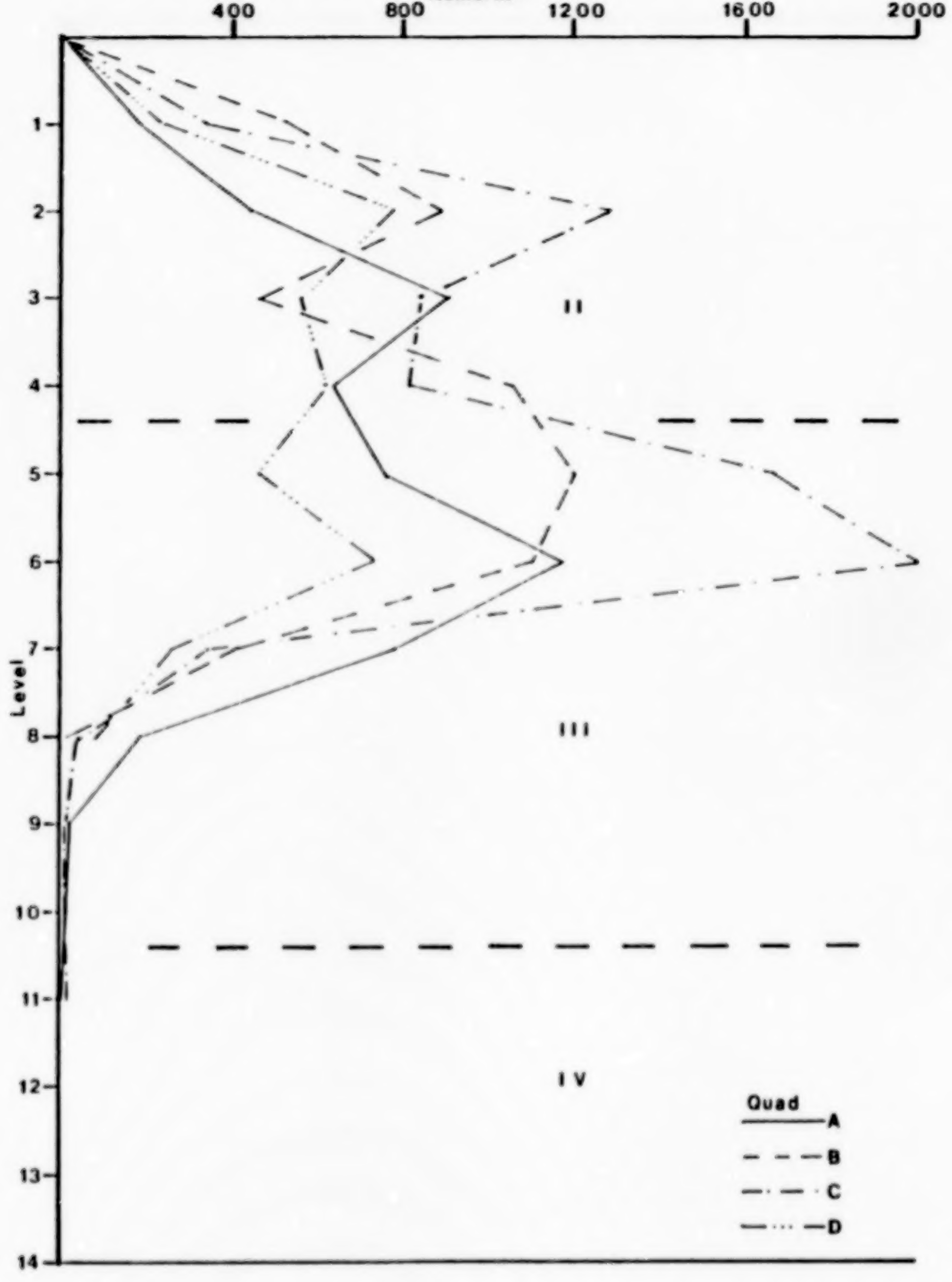

Figure 4.8. Vertical distribution of cultural material in TP-B.

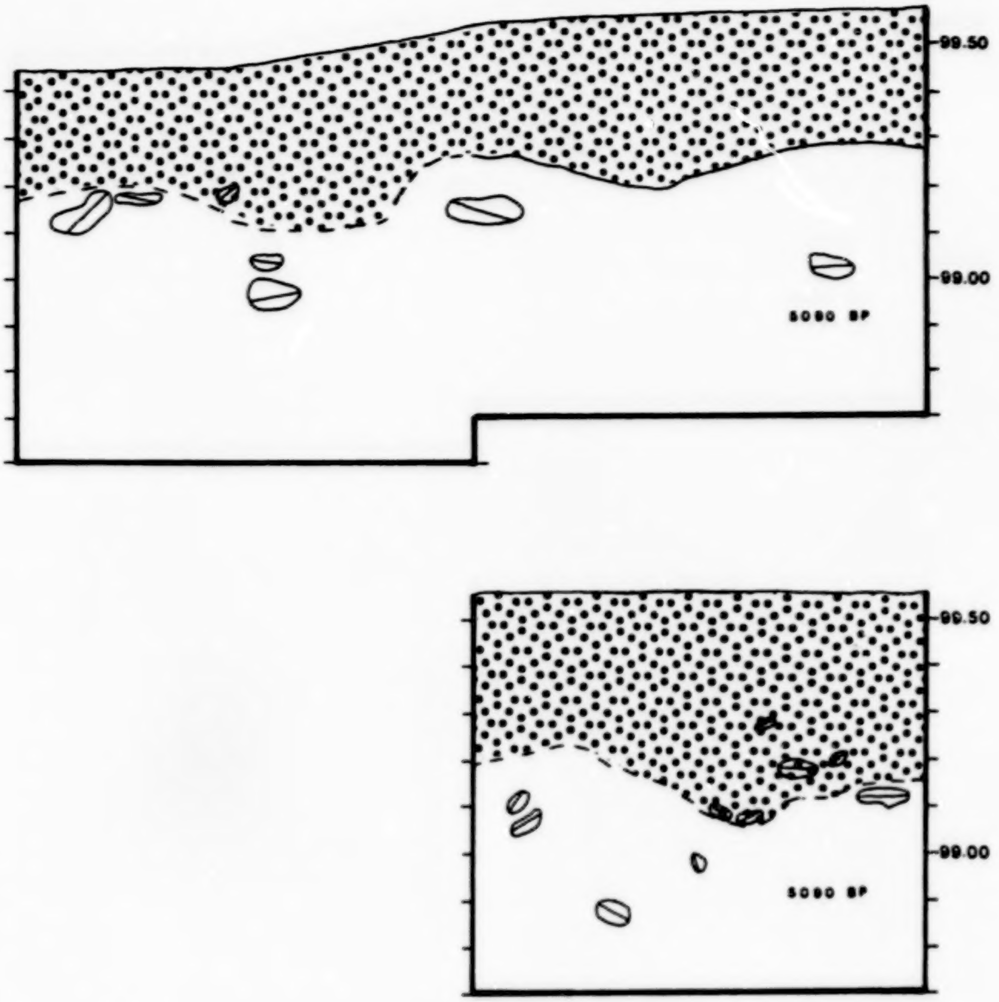

Figure 4.9. North (top) and east (bottom) profiles, TP-C.

TP-C, to the east of the 1981 test units, was a 1 x 2 meter unit. Quad C was excavated to 100 cm below the surface, Quad D to 90 cm. Strata II and III are represented in the profiles of this unit (Figure 4.9). Between 70 to 80 cm below the surface chunks of bisque were encountered in Quad D, in the east half of the unit. At a depth of approximately 75 cm a roughly rectangular-shaped, bisque lined pit measuring 35 x 15 x 4 cm deep was excavated. Continuing into the east profile, this feature was provisionally identified as a fire pit and designated Feature 3. Within and immediately adjacent to the fire pit were several pieces of charcoal. An extended count radiocarbon assay on this charcoal returned a date of 5090 ± 80 BP (Beta 22443). A plotting of the vertical distribution of cultural material recovered from TP-C reveals two density peaks, one in Stratum II and another in Stratum III (Table 4.4 and Figure 4.10).

Table 4.4. Summary of cultural material recovered from TP-C.

Unit/ Quad	Strat/ Level	Debitage OBS	Debitage CCS	Debitage BAS	Tools OBS	Tools CCS	Tools BAS	Total	Density items/m³
CC	II / 1	2	3	1	-	-	-	6	60
	2	4	18	2	1	-	-	25	250
	3	13	71	23	1	3	-	111	1110
	4	10	34	18	-	1	-	63	630
	III/ 5	1	16	7	-	1	1	26	260
	6	8	30	8	-	-	4	50	500
	7	8	28	10	-	2	1	49	490
	8	13	21	16	1	2	3	56	560
	9	4	7	1	1	2	-	15	150
	10	1	1	1	-	-	-	3	30
	Totals	64	229	87	4	11	9	404	
CD	II / 1	5	33	8	1	1	-	48	480
	2	7	39	21	-	2	-	69	690
	3	12	40	12	-	1	-	65	650
	4	12	57	24	-	-	2	95	950
	III/ 5	1	5	1	-	-	1	8	80
	6	9	22	8	1	-	4	44	440
	7	7	21	10	-	-	-	38	380
	8	5	17	4	-	-	1	27	270
	9	4	5	2	-	1	-	12	120
	Totals	62	239	90	2	5	8	406	

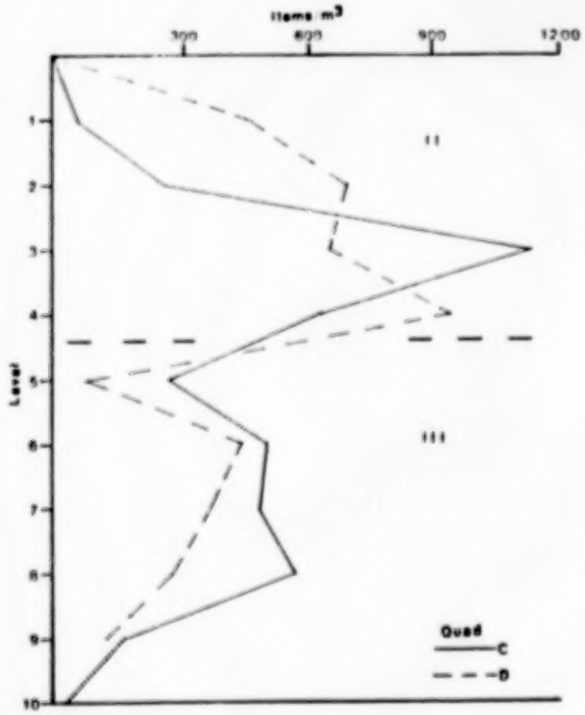

Figure 4.10. Vertical distribution of cultural material in TP-C.

Table 4.5. Summary of cultural material recovered from TP-D.

Unit/ Quad	Strat/ Level	Debitage			Tools			Total	Density items/m^3
		OBS	CCS	BAS	OBS	CCS	BAS		
DA	II / 1	-	11	6	1	2	-	20	200
	2	-	3	2	-	-	1	6	60
	3	-	9	1	-	1	-	11	110
	4	1	8	-	-	-	-	9	90
	III/ 5	2	8	4	-	-	-	14	140
	6	-	1	1	-	-	-	2	20
	7	-	1	-	-	-	-	1	10
	8	1	7	7	-	-	-	15	150
	Totals	4	48	21	1	3	1	78	
DB	II / 1	6	37	9	-	1	-	53	530
	2	10	83	40	-	-	-	133	1330
	3	5	30	-	1	-	-	36	360
	4	8	30	4	-	2	-	44	440
	5	5	46	9	-	1	-	61	610
	6	5	40	22	-	1	-	68	680
	7	4	38	3	-	2	-	47	470
	8	3	25	5	2	3	3	41	410
	9	1	5	3	-	-	3	12	120
	III/10	-	-	-	-	-	-	0	0
	Totals	47	334	95	3	10	6	495	
DC	II / 1	4	16	3	2	3	1	29	290
	2	1	22	8	-	-	-	31	310
	3	2	12	4	-	-	-	18	180
	4	2	14	3	-	-	-	19	190
	III/ 5	6	29	8	-	1	1	45	450
	6	7	10	11	-	4	-	32	320
	Totals	22	103	37	2	8	2	174	
DD	II / 1	11	74	20	1	1	-	107	1070
	2	4	36	11	1	1	-	53	530
	3	2	34	5	-	2	1	44	440
	4	4	24	6	-	-	1	35	350
	5	5	40	14	-	-	3	60	600
	6	5	44	5	-	2	-	56	560
	7	-	29	4	-	1	-	34	340
	8	2	18	4	-	-	-	24	240
	9	-	-	-	-	-	-	0	0
	Totals	31	299	69	2	7	5	413	

TP-D was situated to the north of the 1981 test units and toward the edge of the terrace slope. Quad A was excavated to 80 cm, Quad B to 100 cm, Quad C to 60 cm, and Quad D to 90 cm below the surface. Compared to the other test pits, the upper levels of TP-D were remarkably free of cobbles. Furthermore, the excavators reported that, beginning at approximately 40 cm below the surface, there was a noticeable difference in the consistency of the soil in quads A/C and B/D, with that of A/C being more clayey and B/D being siltier and more friable. The distribution of cultural material seems to follow this

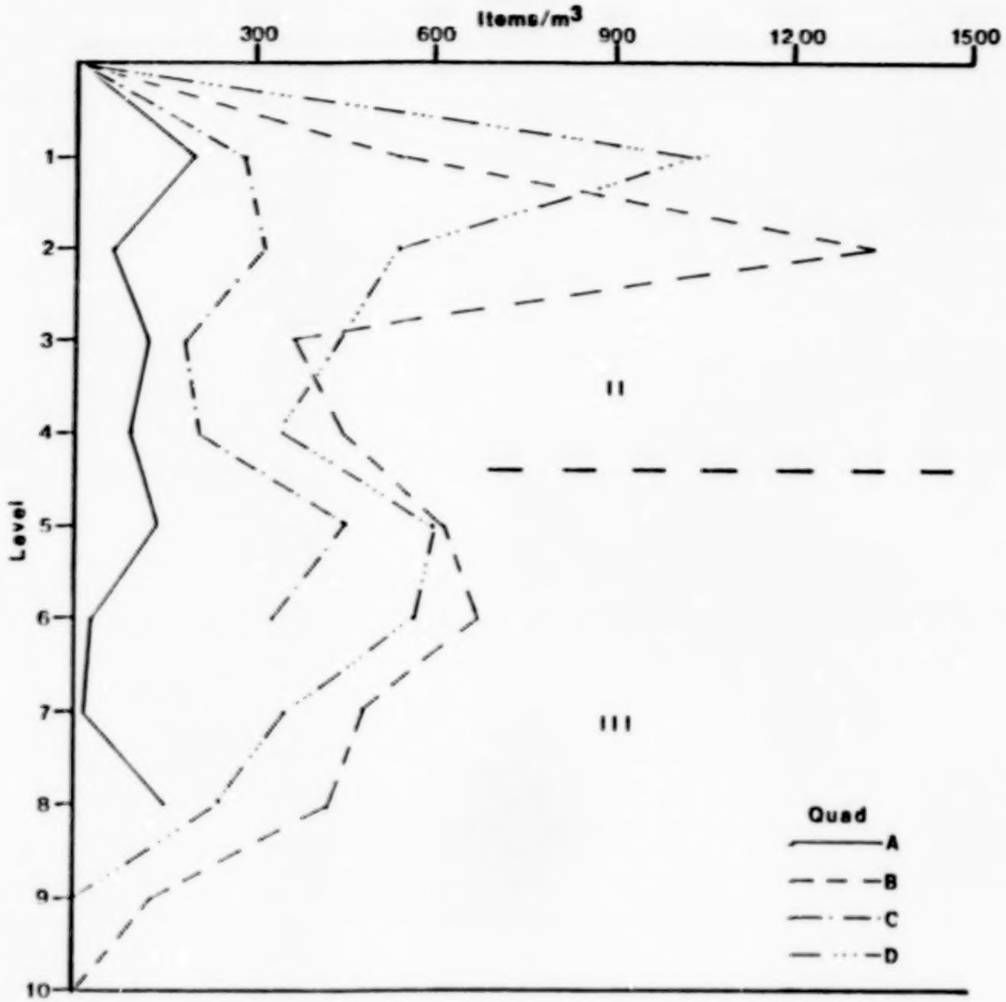

Figure 4.11. Vertical distribution of cultural material in TP-D.

trend, with less debris recovered from the west half of the test unit (Table 4.5 and Figure 4.11). While cobbles were relatively sparse in the upper levels, at a depth of approximately 70 to 80 cm below the surface in Quad B there appeared a concentration of rounded cobbles, flaked and ground stone tools, charcoal and bisque within a matrix of darker Stratum II type soil. The east and north profiles of TP-D indicate that the edge of a substantial pit was excavated (Figure 4.12). Beginning at approximately 30 cm below the surface, it varies in depth from 50 to 80 cm below the surface. The pit as well as the cobble and artifact strewn surface was designated Feature 4 and is considered to represent the edge of a housepit. A radiocarbon assay on charcoal associated with the artifacts recovered between 70 to 90 cm below the surface returned a date of 1020 ± 60 BP (Beta 22442).

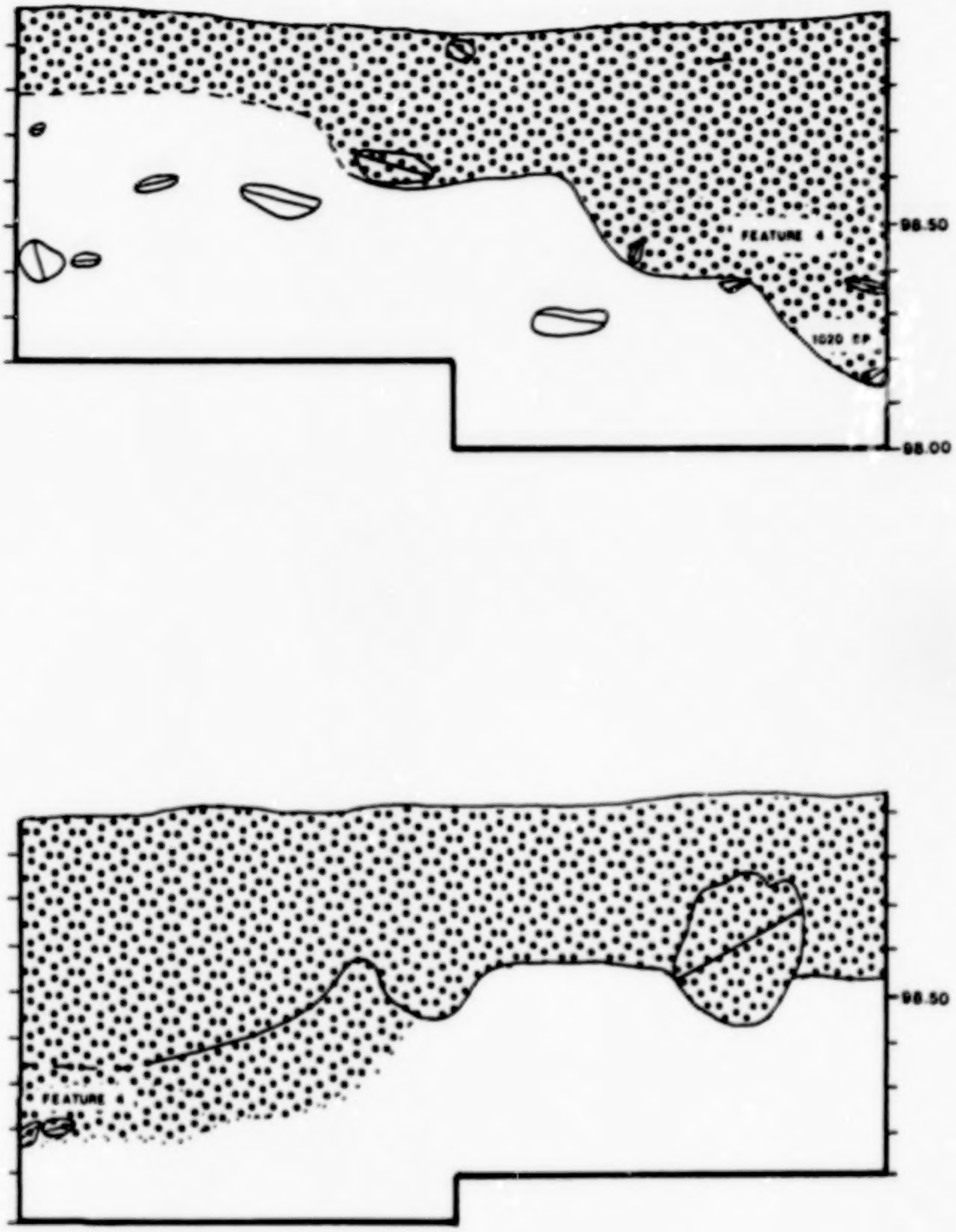

Figure 4.12. North (top) and east (bottom) profiles of TP-D.

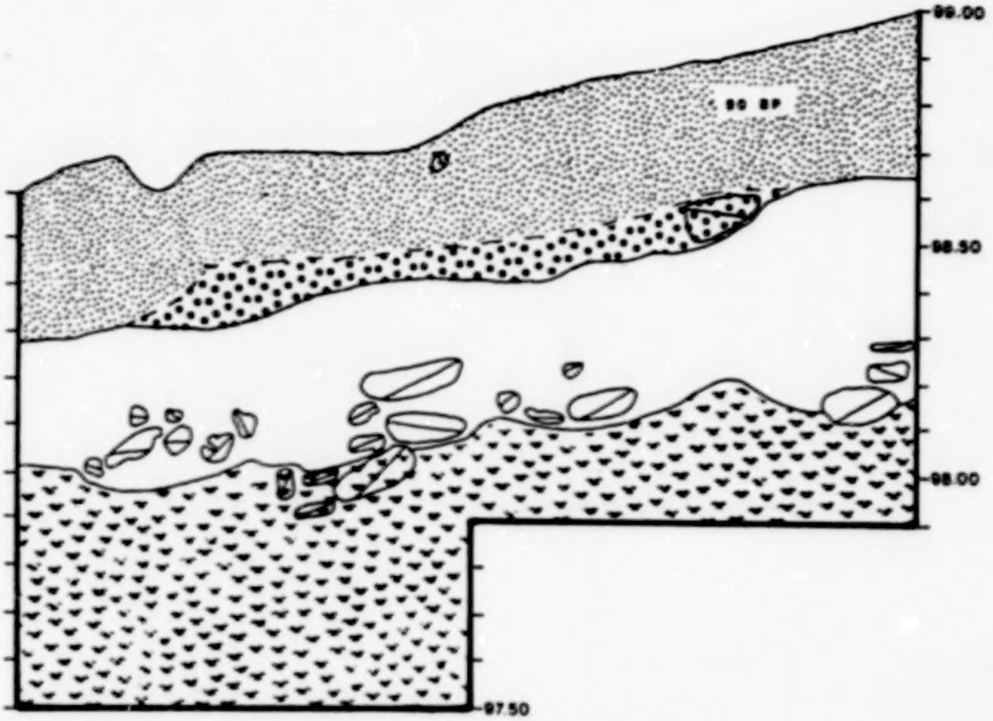

Figure 4.13. North profile of TP-G.

TPs E, F, G, and H comprise an L-shaped block excavation at the north end of the tested area where, as elsewhere, the ground surface slopes downward to the west (Figure 4.13). TPs F and G are 2 x 2's, TP-E is a 1 x 2, and TP-H is a 1 x .3 meter unit. The upper 20 to 30 cm of fill of each of these test pits is the dark, charcoal-laden Stratum I silt. Strata II, III, and IV are represented in the profiles of TPs F and G (Figure 4.14) and cobbles follow the contour of the ground surface, occurring higher toward the east. The distinction between strata I and II in TPs E through G, which is subtle in any event, was not recognized during the 1986 field season due in large part to the extremely dry conditions and the overprinting of Stratum II by Stratum I. Within strata I and II of TPs E through H were found a number of tanged and barbed projectile points, most of the bone tools and fragments, and a fragment of a baked clay figurine. Two radiocarbon assays were returned on charcoal collected from Stratum I: 90 ± 70 BP (Beta 17819) from Level 2 of GD and 140 ± 60 BP (Beta 17816) from Level 3 of FC. Stratum II is also dated by two radiocarbon assays: 320 ± 50 BP (Beta 17817) from Level 3 of FD and 330 ± 80 BP (Beta 17818) from Level 4 of FA.

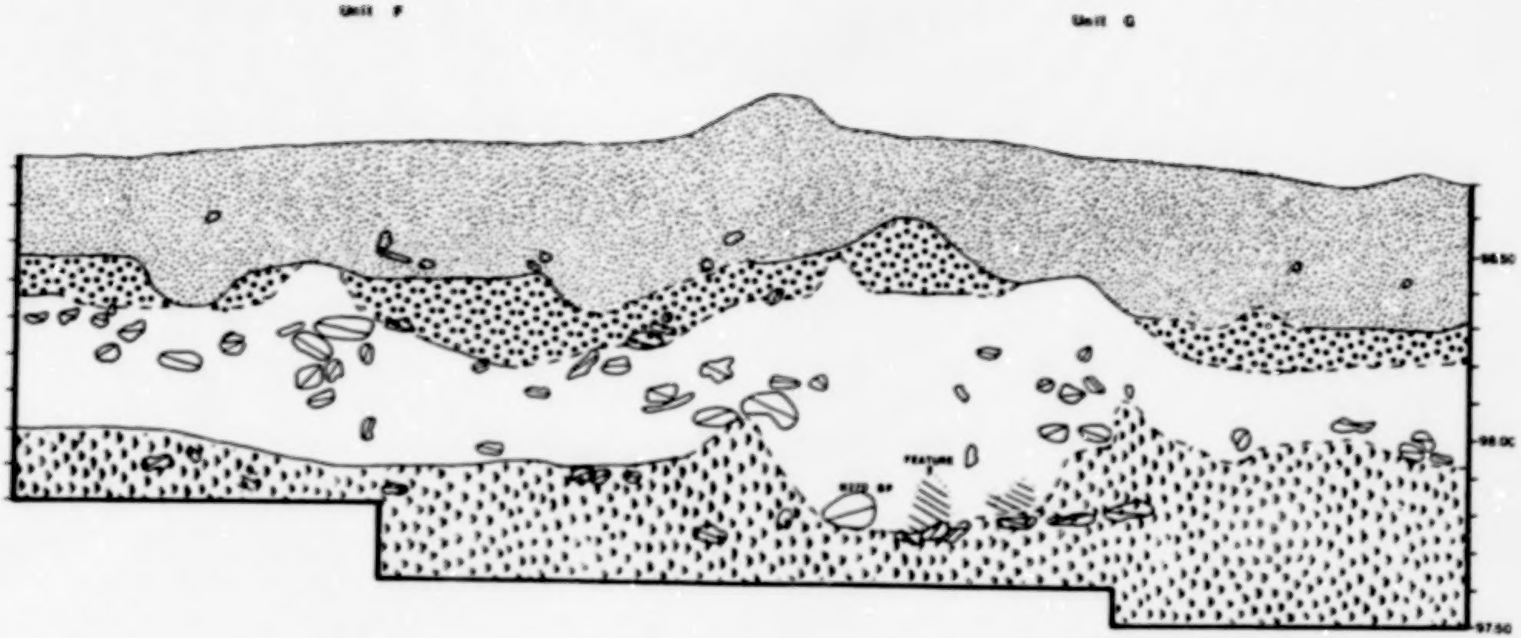

Figure 4.14. West profile of TPs F and G.

Table 4.6. Summary of cultural material recovered from TP-E.

Unit/ Quad	Strat/ Level	Debitage OBS	Debitage CCS	Debitage BAS	Tools OBS	Tools CCS	Tools BAS	Total	Density items/m^3
EA	I / 1	2	31	9	-	4	-	46	460
	2	-	12	9	-	2	1	24	240
	3	2	18	5	-	2	4	31	310
	Totals	4	61	23	0	8	5	101	
EC	I / 1	5	34	34	-	6	-	79	790
	2	-	14	9	-	2	-	25	250
	3	-	29	6	-	1	-	36	360
	Totals	5	77	49	0	9	0	140	

Feature 1, a human burial, was first noticed during the 1986 field season at approximately 45 cm below the surface. The feature first appeared as a circle of strata I/II fill surrounded by lighter, reddish-brown Stratum III silt in unit GD. A portion of the cranium and several long bones were exposed sufficiently to determine their identity and the excavation terminated at that time. The burial was subsequently exposed and exhumed during the spring of 1987. At that time, the 1 x .3 meter unit designated TP-H was excavated in order to facilitate the removal of the burial as well as to determine the upper limit of the pit into which the remains had been placed. A subtle color and textural change was noted at approximately 30 cm below the surface near the bottom of Stratum I, defining the upper edge of the pit. This oval-shaped burial pit, measuring 105 x 90 x 35 cm deep, was found to contain the poorly preserved remains of a 32 to 37 year old female buried in a flexed position on her left side. The pit appears to have been excavated from the interface of strata I and II, and terminated within the cobble lens of Stratum III. No grave goods were found associated with the burial.

Feature 2, discovered in the Stratum IV clayey silt of the west half of TPs F and G at a depth of approximately 100 to 120 cm below the surface, consisted of irregularly shaped concentrations of compact, fine grey sand within which were pieces of charcoal and very small flecks of calcined bone. A radiocarbon assay on a composite charcoal sample collected from these areas returned a date of 6270 ± 130 BP (Beta 22441). At this depth the cultural material included projectile points, bifaces, unifaces, choppers, and cores. Feature 2 is interpreted as the remains of fire pits.

The vertical distribution of debitage and tools recovered from TPs E through H (Tables 4.6-4.9 and Figures 4.15-4.16) reveals the presence of density peaks in each of the strata represented, with the possible exception of Stratum I.

Table 4.7. Summary of cultural material recovered from TP-F.

Unit/	Strat/	Debitage			Tools				Density
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	Total	items/m³
FA	I / 1	-	2	4	-	-	-	6	60
	2	1	13	4	-	1	-	19	190
	3	6	35	8	-	7	1	57	570
	II / 4	2	32	20	1	1	2	58	580
	5	6	81	51	1	2	3	144	1440
	6	3	19	6	-	2	-	30	300
	III/ 7	-	17	-	-	-	3	20	200
	8	8	31	19	-	3	6	67	670
	9	-	3	-	2	2	1	8	80
	10	2	29	5	-	-	-	36	360
	IV /11	1	8	6	-	2	1	18	180
	12	1	4	1	-	-	1	7	70
	13	-	4	1	-	-	-	5	50
	14	-	4	-	-	-	-	4	40
	Totals	30	282	125	4	20	18	479	
FB	I / 1	2	20	10	1	1	-	34	340
	2	5	30	16	-	1	3	55	550
	II / 3	6	34	21	1	1	2	65	650
	4	4	42	12	-	5	8	71	710
	5	1	35	20	-	2	-	58	580
	III/ 6	2	8	5	1	1	-	17	170
	7	1	17	6	-	1	1	26	260
	8	8	36	17	-	1	3	65	650
	IV / 9	-	4	2	-	1	-	7	70
	10	-	16	4	-	-	-	20	200
	11	1	9	1	-	1	1	12	120
	Totals	30	251	144	3	15	17	430	
FC	I / 1	-	2	1	-	-	-	3	30
	2	-	22	4	1	4	-	31	310
	3	1	26	28	1	1	-	57	570
	II / 4	4	62	24	-	5	-	95	950
	5	-	31	58	2	1	2	94	940
	III/ 6	1	28	4	-	-	-	33	330
	7	2	3	4	-	-	3	12	120
	8	5	30	27	-	1	6	69	690
	9	2	4	1	-	-	-	7	70
	10	-	16	6	-	1	-	23	230
	IV /11	1	14	3	-	-	-	18	180
	12	2	2	-	-	-	-	4	40
	Totals	18	240	160	4	13	11	446	
FD	I / 1	3	21	3	1	1	2	31	310
	2	3	29	31	-	1	3	67	670
	II / 3	2	39	29	-	3	-	73	730
	4	6	28	14	-	2	-	50	500
	III/ 5	-	18	6	-	-	-	24	240
	6	4	24	8	1	-	3	40	400
	7	8	26	6	-	-	2	42	420
	8	7	34	15	1	-	2	59	590
	IV / 9	3	12	-	-	1	-	16	160
	10	4	9	1	-	1	-	15	150
	11	1	2	-	-	-	1	4	40
	12	-	1	1	-	-	-	2	20
	Totals	41	243	114	3	9	13	423	

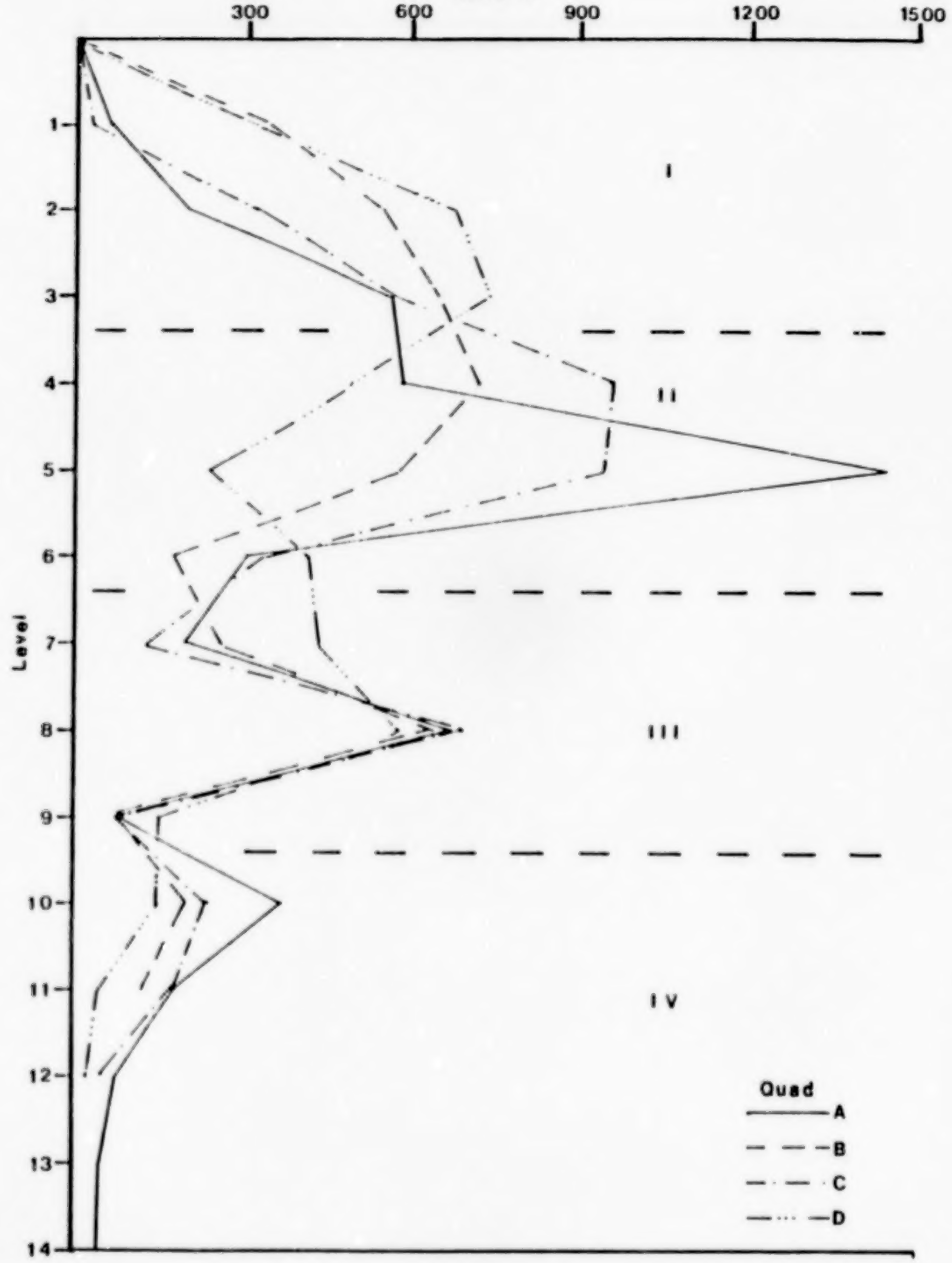

Figure 4.15. Vertical distribution of cultural material from TP-F.

Table 4.8. Summary of cultural material recovered from TP-G.

Unit/ Quad	Strat/ Level	Debitage			Tools			Total	Density items/m^2
		OBS	CCS	BAS	OBS	CCS	BAS		
GA	I / 1	1	3	3	-	-	-	7	70
	2	-	8	11	-	1	-	20	200
	3	3	29	38	-	4	-	74	740
	II / 4	7	39	38	-	6	2	92	920
	5	1	18	21	-	1	-	41	410
	III/ 6	2	25	20	-	3	-	50	500
	7	3	30	15	1	-	1	50	500
	8	4	25	16	-	1	1	47	470
	9	4	18	11	1	2	2	38	330
	10	7	17	22	-	-	2	48	480
	IV /11	5	7	11	-	-	1	24	240
	12	3	22	15	-	2	-	42	420
	13	5	18	14	-	4	-	41	410
	14	1	13	7	-	1	-	22	220
	15	-	4	1	-	-	-	5	50
	Totals	46	276	243	2	25	9	601	
GB	I / 1	-	18	33	-	1	2	54	540
	2	2	21	28	-	2	1	54	540
	3	-	16	32	-	3	2	53	530
	II / 4	2	41	27	-	3	4	77	770
	5	4	32	21	-	4	-	61	610
	III/ 6	7	27	24	-	1	-	59	590
	7	2	35	21	1	3	-	62	620
	8	6	44	14	2	2	7	75	750
	9	16	47	25	3	1	3	95	950
	IV /10	-	8	14	-	2	5	29	290
	11	-	2	-	-	-	-	2	20
50 x 50	12	-	2	-	-	-	-	2	80
	13	-	-	-	-	-	-	0	0
	14	-	-	-	-	-	-	0	0
	Totals	39	293	239	6	22	24	623	
GC	I / 1	-	2	5	-	-	-	7	70
	2	-	11	20	-	1	1	33	330
	3	4	47	47	1	2	-	101	1010
	II / 4	3	52	50	3	2	4	114	1140
	5	5	48	41	-	6	2	102	1020
	III/ 6	1	29	18	1	1	2	52	520
	7	4	24	17	-	2	3	50	500
	8	4	20	8	-	2	1	35	350
	9	5	17	16	-	4	4	46	460
	10	2	22	6	-	2	1	33	330
	IV /11	5	16	18	1	2	1	43	430
	12	3	8	13	-	1	1	26	260
	13	-	7	2	-	-	-	9	90
	14	-	2	2	-	1	-	5	50
	Totals	36	305	263	6	26	20	656	
GD	I / 1	-	39	31	-	-	-	70	700
	2	-	41	62	-	5	2	110	1100
	II / 3	5	15	30	-	3	5	58	580
	4	2	35	38	-	4	3	82	820
	5	4	31	34	-	2	-	71	710
	III/ 6	4	42	13	-	2	-	61	610
	7	2	14	11	-	2	2	31	310
	8	3	15	13	-	-	2	33	330
	9	9	28	18	-	4	-	59	590
	10	4	21	20	-	-	-	45	450
	IV /11	-	2	3	-	-	-	5	50
	12	-	1	1	-	-	-	2	20
	Totals	33	284	274	0	22	14	627	

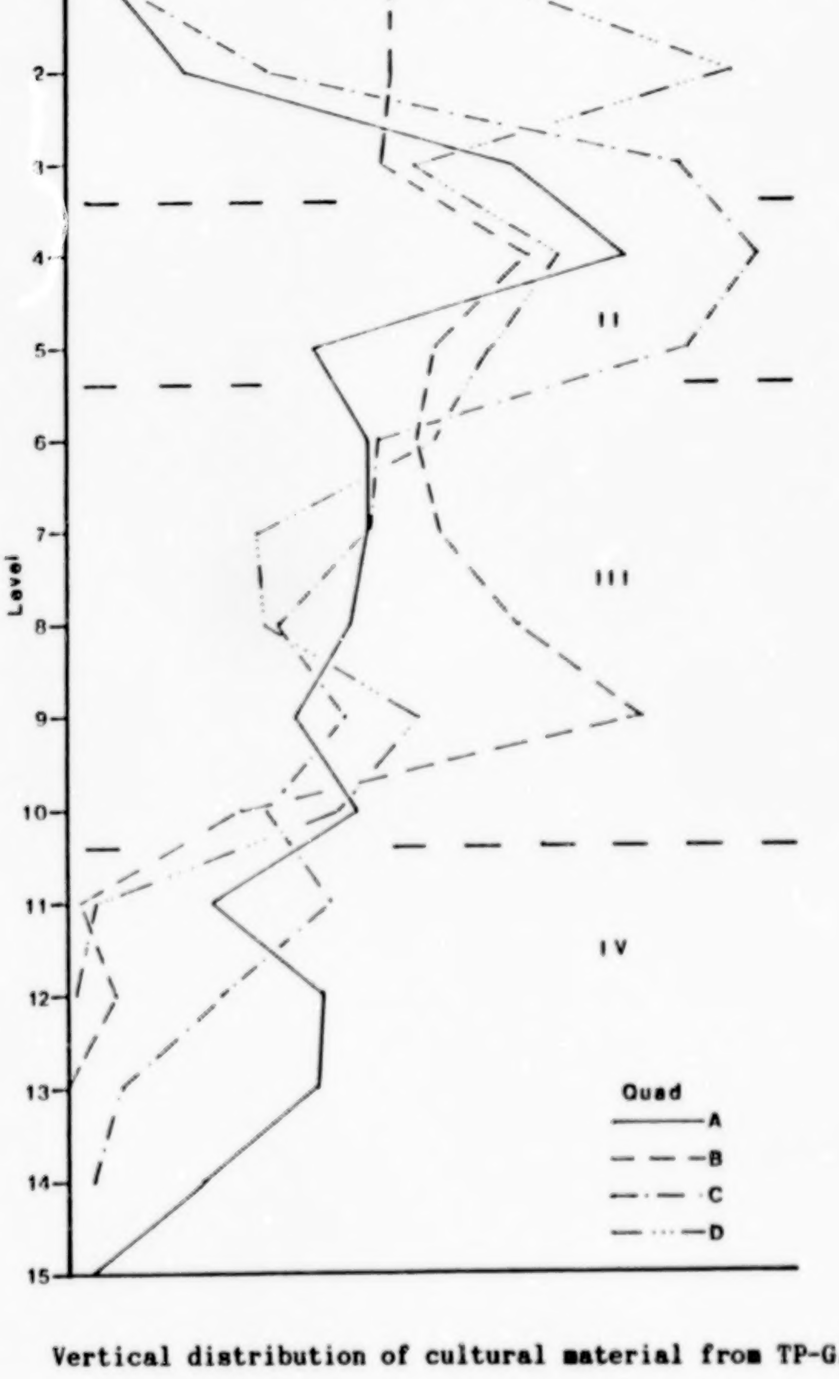

Figure 4.16. Vertical distribution of cultural material from TP-G.

√2

Table 4.9. Summary of cultural material recovered from TP-H.

Unit/ Quad	Strat/ Level	Debitage			Tools			Total	Density items/m²
		OBS	CCS	BAS	OBS	CCS	BAS		
HC	I / 1	6	15	14	-	1	-	36	1188
	2	1	15	8	-	-	1	25	825
	3	4	10	5	-	1	-	20	660
	Totals	11	40	27	0	2	1	81	

In sum, the radiocarbon dates, vertical distribution of cultural material--including debitage, chipped and ground stone tools--and associated soil strata indicate the presence of four cultural components which are briefly described below.

Component I, found in the midden-like upper soil stratum, is dated by a series of four radiocarbon assays: 90 ± 70 BP, 140 ± 60 BP, 320 ± 50 BP, and 330 ± 80 BP. Associated with this component are barbed and tanged projectile points, bone tools, a baked clay figurine fragment, and a tightly flexed human burial.

Component II, found in the medium brown silt of Stratum II, is dated by two radiocarbon assays: 450 ± 70 BP and 1020 ± 60 BP. Associated with this component are stone bowl and hopper mortar fragments, and a partially exposed housepit. The diagnostic projectile points recovered from this component include one small concave base point, two broad-necked and side-notched varieties, and a foliate-shaped point.

Component III is found within the reddish-brown clayey silt of Stratum III and is dated by one radiocarbon assay of 5090 ± 80 BP returned on charcoal from a small fire pit. Associated with this component are broad-stemmed, corner- and side-notched projectile points, and stone bowl mortar fragments.

Component IV, found between 110 and 150 cm below the surface in the north block area, includes artifacts and a fire pit. Charcoal collected from the fire pit, which also contained small fragments of calcined bone, returned a date of 6270 ± 130 BP. Two projectile points recovered from this component include an asymmetrical broad-stemmed specimen and a convex base specimen.

CHAPTER 5

DESCRIPTION AND ANALYSIS OF NARROWS SITE ARTIFACTS

TOOLS

Collected from the test excavations at the Narrows Site were 597 tools. The artifact assemblage includes a variety of chipped and ground stone tools, worked bone, and a fragment of a baked clay figurine (Table 5.1). Except for this last item, the assemblage appears to consist of utilitarian artifacts.

In this section the artifacts are separated into the morphological and functional classes commonly found in the archaeological assemblages of western Oregon. Metric data for each artifact are presented in the accompanying tables. Provided also is the cultural component to which each artifact has been assigned. Each of the 8913 pieces of lithic debitage collected during the 1986 and 1987 field seasons was analyzed and the results are presented in this section. The artifact labeling system and lot number system is presented in Appendix A.

Table 5.1. Summary of artifacts recovered from the Narrows Site.

Flaked Stone		Ground Stone	
Projectile Points	66	Stone Bowl Mortars	5
Preforms	4	Hopper Mortars	1
Formed Bifaces	40	Pestles	5
Drills	4	Abraders	1
Unformed Bifaces	32		
Flake Unifaces	196		
Spall Scrapers	14		
Cores	44	Bone Tools	
Debitage	8913	Bone Point	1
		Polished Bone	9
Cobble Tools		Pointed Bone	5
Cobble Cores	11		
Choppers	119		
Hammerstones	26		
Pounders	3	Baked Clay	
Edge Faceted Cobbles	5	Figurine Fragment	1
Anvils	5		

Table 5.2. Summary of Narrows Site projectile points by type and material.

Type	Material OBS	 CCS	 BAS	Total
G-1	-	8	2	10
G-2	-	5	2	7
G-frags.	-	5	-	5
NN	-	2	-	2
SN-1	-	4	1	5
SN-2	1	6	-	7
SN-3	1	-	-	1
SN-frags.	-	1	-	1
CN	-	2	-	2
BS-1	1	3	-	4
BS-2	-	1	-	1
F-1	2	-	-	2
F-2	-	1	-	1
V-1	-	1	-	1
V-2	-	-	1	1
Fragments	3	11	2	16
	8	50	8	66

Projectile Points

Projectile points form a traditional class of artifact that served to tip arrows, atlatl darts and thrusting spears. They are generally well-formed bifaces with a sharp distal point and a proximal end shaped to allow hafting to a wooden shaft (Figures 5.1 and 5.2). Projectile points were an integral part of the procurement technology of aboriginal peoples. Further, archaeologists have found morphological variation in the hafting element of projectile points to be useful in developing local and regional chronologies.

Sixty-six whole and fragmentary projectile points were recovered from the Narrows Site. Of these, 50 are classifiable into 12 types, based primarily upon the morphological characteristics of the hafting element. The majority of these specimens are manufactured of CCS (Table 5.2). Of the classifiable projectile points, 44% (22) are barbed and tanged varieties, 4% (2) are other narrow-necked specimens, 28% (14) are side-notched, 4% (2) are corner-notched,

Table 5.3. Narrows Site projectile point data.

Type	Specimen Number	Raw Mat'l	Max Length	Blade Width	Neck Width	Base Width	Thick	Wt	Prov.	Comp.
G-1	60-1	CCS	23.1*	18.3	4.2	-	3.4	1.1	Surf.	I
G-1	71-2	CCS	20.2*	13.9	4.3	-	3.0	0.5	FD/1	I
G-1	76-3	CCS	15.5*	15.7	4.5	-	3.6	0.8	FA/3	I
G-1	76-4	CCS	21.6	11.7*	4.8	-	3.0	0.7	FA/3	I
G-1	83-501	CCS	22.9	14.8	3.9	-	4.4	1.2	EA/1	I
G-1	94-1	CCS	15.5	11.5*	4.2	-	2.6*	0.4	GD/2	I
G-1	99-1	CCS	20.0	16.0	4.6	-	3.0	0.8	GA/4	I
G-1	101-2	BAS	16.7	15.3	4.3	-	3.6	0.7	GC/4	I
G-1	107-1	BAS	15.6*	15.0	4.8	-	3.2	0.7	GC/6	III
G-1	124-1	CCS	14.7	14.0	4.6	-	3.4	0.5	BC/3	I
G-2	46-3	CCS	18.0	14.9	3.7	-	3.2	0.5	BD/4	II
G-2	71-1	BAS	17.3*	11.7	3.2	-	3.2	0.5	FD/1	I
G-2	79-1	CCS	13.2	13.4	3.4	-	2.1	0.3	FD/3	I
G-2	93-501	CCS	17.3	13.9	4.4	-	3.4	0.6	GC/2	I
G-2	98-3	BAS	34.8	13.5	4.5	-	2.9	1.3	GD/3	I
G-2	105-2	CCS	13.0*	11.2	3.5	-	2.2	0.2	GC/5	I
G-2	257-1	CCS	17.1	11.1	2.9	-	2.0	0.3	GB/7	III
G-FRAG	99-8	CCS	11.0*	-	-	-	4.8	0.2	GA/4	I
G-FRAG	102-1	CCS	15.5	12.8	3.6	-	3.4	0.5	GD/4	I
G-FRAG	109-3	CCS	7.2*	17.8	4.6	-	3.7	0.3	GB/6	III
G-FRAG	111-1	CCS	16.9*	13.1	3.6	-	3.7	0.6	FB/4	I
G-FRAG	267-1	CCS	14.0*	-	-	-	3.0	0.3	HC/3	I
NN	102-2	CCS	10.5*	9.5	3.2	-	2.0	0.2	GD/4	I
NN	257-2	CCS	13.0	7.4	3.6	-	2.8	0.2	GB/7	III
SN-1	24-1	CCS	12.5*	14.5	-	-	4.1	0.7	BC/3	II
SN-1	76-1	CCS	18.1*	12.7	-	-	2.9	0.8	FC/2	I
SN-1	77-2	CCS	10.8*	15.7	9.8	-	3.2	0.5	FB/3	I
SN-1	80-3	CCS	11.1*	12.8	9.3	-	2.4	0.3	FA/4	I
SN-1	88-1	BAS	11.6*	11.2	-	-	3.7	0.6	GB/1	I
SN-2	18-501	CCS	35.7	17.2	10.5	11.7	7.5	3.9	BA/2	II
SN-2	113-1	CCS	29.2	18.7	11.4	14.0	6.6	2.5	FD/4	I
SN-2	114-1	CCS	27.9	16.7*	10.9	11.9	5.4	2.1	FB/4	I
SN-2	130-1	CCS	23.0*	15.4*	10.0	12.1*	4.4	2.0	A	
SN-2	147-1	CCS	21.9	16.5	9.5	11.7	5.4	1.7	BC/7	III
SN-2	232-1	CCS	29.0	15.9	8.3	9.4	4.9	2.2	GC/7	III
SN-2	250-1	OBS	12.2*	16.1*	13.8	15.5	7.0	1.1	GB/8	III
SN-3	120-1	OBS	56.7	24.2	18.1	21.2	10.4	12.0	AB/4	II
SN-FRAG	17-1	CCS	5.5*	13.4*	10.9	-	5.4	0.5	BA/2	II
CN	167-2	CCS	41.7	21.0	9.1	9.6	6.8	4.7	BC/7	III
CN	206-1	CCS	36.9	20.3	7.7	10.0	5.3	3.2	FA/8	III
BS-1	42-1	CCS	12.9*	16.5	14.0	-	5.9	1.4	TP1	II
BS-1	47-3	CCS	41.2	23.4	13.6	14.0	5.8	5.1	BB/5	III
BS-1	167-1	OBS	23.6	22.4	11.0*	-	5.7	2.2	CC/8	III
BS-1	183-1	CCS	12.9*	19.2*	12.0*	11.3*	5.6	1.3	DC/5	III
BS-2	248-1	CCS	38.3	16.8	12.5	12.3	8.1	4.5	GA/12	IV
F-1	37-501	OBS	33.3	18.2	15.7	9.0	8.5	4.3	CC/2	II
F-1	97-1	OBS	17.1*	17.2	16.0	9.6	8.0	2.1	GC/3	I
F-2	246-1	CCS	33.4	20.4	-	11.0	5.8	3.4	GC/11	IV
V-1	123-1	CCS	31.8	10.6	9.1	2.0	6.0	1.8	EA/3	I
V-2	117-503	BAS	34.8	10.6	8.4	5.0	5.3	1.5	FC/5	I
FRAG	33-1	CCS	10.9*	16.3*	-	-	3.3	0.5	BC/4	II
FRAG	39-4	CCS	12.8*	8.3*	-	-	2.5*	0.2	CC/3	II
FRAG	46-1	OBS	9.8*	7.7*	-	-	3.1	0.3	BD/4	II
FRAG	61-2	OBS	13.1*	9.0*	-	-	6.1	0.4	DC/1	II
FRAG	78-2	CCS	15.0*	10.7	-	-	3.3	0.4	FC/3	I
FRAG	83-1	CCS	11.8*	8.0	-	-	1.7	0.1	EA/1	I
FRAG	88-3	BAS	11.4*	9.8	-	-	3.6	0.3	GB/1	I
FRAG	94-7	CCS	6.5*	19.0	-	-	4.6	0.5	GD/2	I
FRAG	96-3	CCS	13.3*	9.0*	-	-	2.5	0.2	GB/3	I
FRAG	99-7	CCS	8.3*	9.0*	-	-	3.0	0.2	GA/4	I
FRAG	100-6	CCS	13.0*	11.4*	-	-	5.7	0.6	GB/4	I
FRAG	101-5	OBS	9.8*	8.4	-	-	2.8	0.2	GC/4	I
FRAG	105-1	CCS	10.6*	8.3	-	-	3.3	0.3	GC/5	I
FRAG	108-1	CCS	11.7*	11.3	-	-	2.6	0.3	GA/6	III
FRAG	120-1	CCS	15.4*	12.0	-	-	3.1	0.5	EC/1	I
FRAG	139-1	BAS	11.0*	9.6*	-	-	5.0	0.4	BA/5	III

measurements in millimeters
* indicates broken specimen

10% (5) are other broad-stemmed points, 6% (3) are leaf-shaped varieties, and 4% (2) are assignable to Connolly's (1986) V-stemmed Coquille Series. The metric data for the individual specimens is provided in Table 5.3.

Barbed and Tanged Points

G-1 This type includes narrow-necked, basally notched points with short, contracting or straight stems. Pointed barbs exceed the length of the stem. These are referred to in the literature as Gunther Barbed. (N=10)

G-2 This type includes narrow-necked, basally notched points with short, contracting stems. Pointed tangs do not exceed the length of the stem. These are referred to in the literature as Gunther Stemmed or Gunther Tanged. (N=7)

Five additional specimens are too fragmentary to separate into barbed or tanged categories.

Other Narrow-necked Points

NN These points are small, narrow-necked specimens with pin stems and distal shoulder angles approaching 180 degrees. (N=2)

Side-notched Points

SN-1 This type includes thin, triangular points with shallow to deeply concave bases. Shallow side-notches occur along straight blades. These are referred to in the literature as Desert Side-notched. (N=5)

SN-2 This type includes foliate-shaped specimens with shallow side-notches low on the convex blade. Specimens are broad-necked with convex bases. Neck width/base width ratios greater than .70 indicate shallow notching. (N=7)

SN-3 This type has shallow side-notches on a thick, lanceolate point the base of which is straight with a shallow notch. (N=1)

One medial fragment with opposing notches represents an additional side-notched specimen (17-1) of indeterminate type. However, with a neck width of 10.9 mm it falls within the broad-necked class and may be assignable to the SN-2 category.

Corner-notched Points

CN This type includes broad-necked, triangular bladed points with expanding stems and straight bases. (N=2)

Other Broad-stemmed Points

BS-1 This type includes specimens with parallel stems and straight bases. Neck widths are greater than 11 mm. (N=4)

BS-2 This type is a thick, foliate-shaped point with one shouldered blade, the opposite blade of which is convex. The base is convex. (N=1)

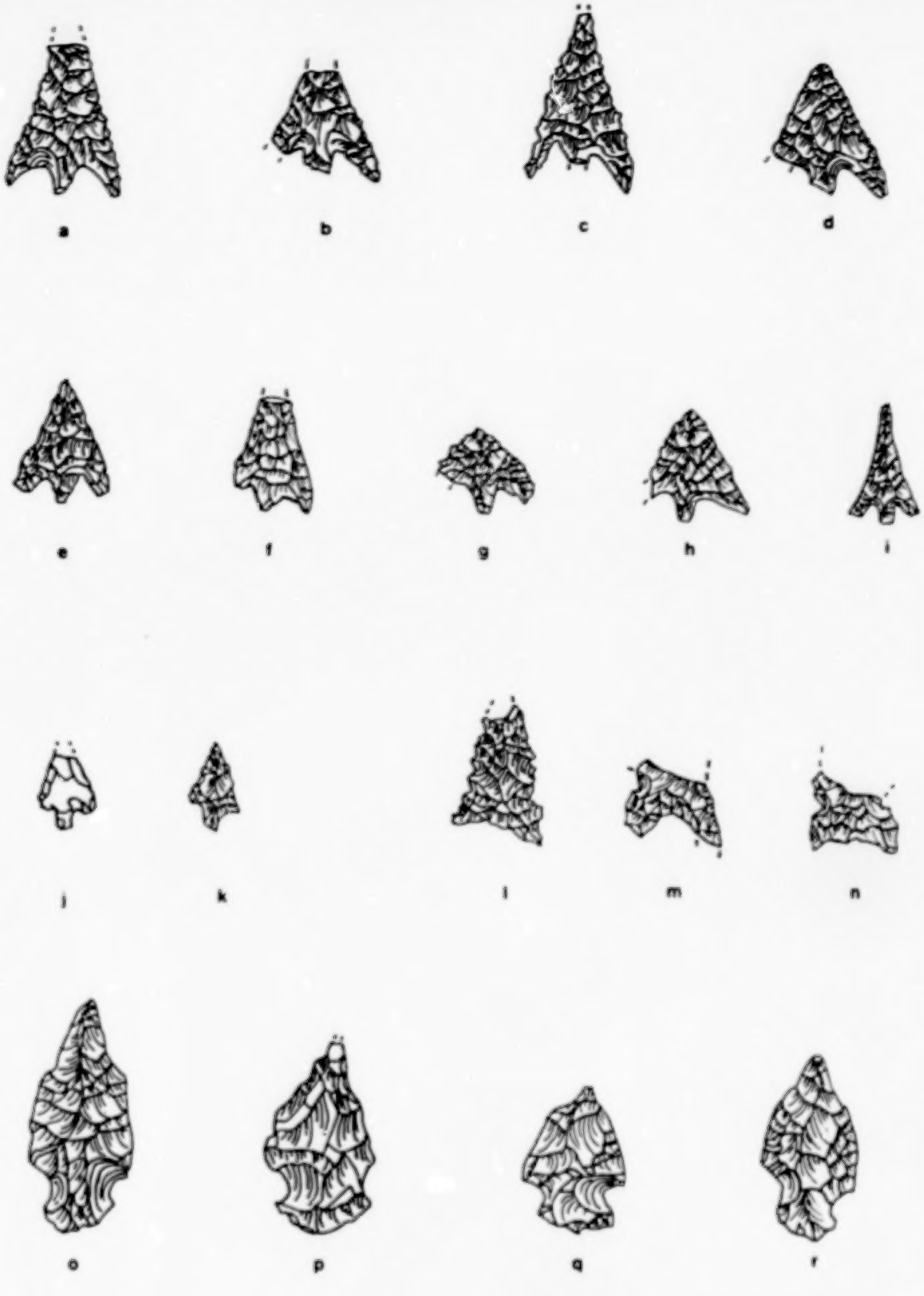

Figure 5.1. Narrows Site projectile points: a-d, G1; e-i, G2; j-k, NN; l-n, SN1; o-r, SN2 (shown actual size).

a. 40-1
b. 76-3
c. 83-501
d. 99-1
e. 46-3
f. 71-1
g. 79-1
h. 93-501
i. 257-1
j. 102-2
k. 257-2
l. 74-1
m. 77-2
n. 80-3
o. 18-501
p. 113-1
q. 147-1
r. 232-1

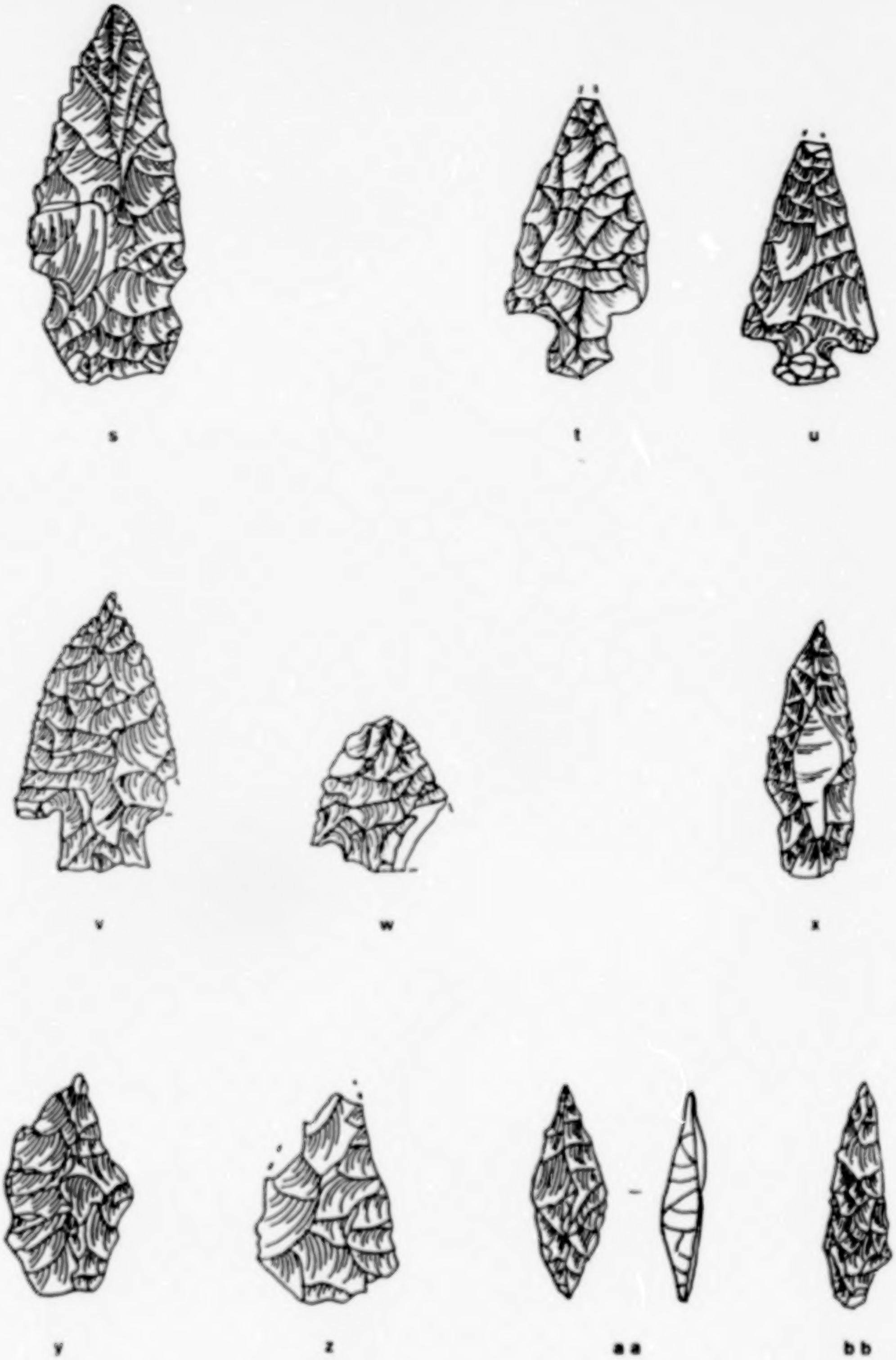

Figure 5.2. Narrows Site projectile points: s, SN3; t-u, CN; v-w, BS1; x, BS2; y, F1; z, F2; aa, V1; bb, V2 (shown actual size).

s.	126-1	u.	206-1	w.	167-1	y.	37-501	aa.	123-1
t.	147-2	v.	47-3	x.	248-1	z.	246-1	bb.	117-503

Table 5.4. Metric data for Narrows Site preforms.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
73-5	CCS	24.0	19.0	5.5	2.2	FB/2	I
96-2	CCS	22.7	19.5	4.1	1.5	GB/3	I
101-4	CCS	23.5	13.9	6.0	2.1	GC/4	I
128-1	OBS	32.0	24.0	7.0	5.5	AD/4	II

measurements in millimeters

Foliate Points

F-1 This type includes thick, leaf-shaped points. The single complete specimen has its maximum width near the center of the point. Bases are U-shaped. (N=2)

F-2 This type has a convex base with straight blades. The point of maximum thickness is approximately 1/4 of the distance from the base to the tip. (N=1)

V-shaped Base Points

Connolly (1986) defined, as a series, a set of projectile points recovered from the Standley Site in Camas Valley. The Coquille Series includes V-stemmed specimens, two types of which are represented in the collection from the Narrows Site.

V-1 This type is bipointed, lenticular in cross-section and has a base with straight edges. Connolly defines this as type CS-3 (1986:223). (N=1)

V-2 This type is asymmetrical, having one shouldered edge and one slightly convex edge. This type is similar to Connolly's CS-4 (1986:223-224). (N=1)

Fragments

Sixteen additional projectile point fragments were recovered. Of these, 15 are distal (tip) fragments and one (94-7) appears to be the slightly concave proximal edge of a thin side-notched point.

Preforms

Four bifacially worked specimens which appear to be unfinished projectile points were collected. Three of these are CCS and one is obsidian (Table 5.4). While the intended final shape of these specimens is difficult to surmise, specimen 96-2 may have been originally intended to be a barbed or tanged variety.

Table 5.5. Summary of formed bifaces by type and material.

		Material		
Type	OBS	CCS	BAS	Total
Semi-lunate	-	9	-	9
Mule ear	1	-	-	1
Triangular	-	1	-	1
Scrapers	-	4	-	4
Spatulate	-	-	1	1
Pyramidal	-	3	-	3
Crescentic	-	-	1	1
Fragments	3	17	-	20
	4	34	2	40

Formed Bifaces

This class includes bifacially worked tools (except projectile points and drills) the flaking and shape of which suggest that they are finished artifacts. Forty whole and fragmentary specimens were collected, of which 10% (4) are obsidian, 85 % (34) are CCS, and 5% (2) are basalt (Table 5.5). Several morphological types are included in the assemblage from the Narrows Site. The metric data for individual artifacts is presented in Table 5.6.

Semi-lunate Knives

These artifacts are generally asymmetric with one straight edge and one convex edge (Figure 5.3). Nine fragmentary CCS specimens are represented in the Narrows Site collection.

Mule Ear Knife

One specimen of this class is represented in the collection (Figure 5.3). Roughly triangular, this broken obsidian artifact has a broad, concave distal edge and a short, pointed proximal end.

Triangular Knife

One complete triangular-shaped knife was collected. One end of this CCS artifact is finely pointed, the other is straight (Figure 5.4).

Scrapers

Four bifacially worked tools with steep crushed distal ends which suggest their use as scrapers were collected. Three of these specimens are broken.

Spatulate-shaped

One percussion flaked, spatulate-shaped basalt knife was collected.

Table 5.6. Narrows Site formed biface data.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
Semi-lunate							
22-501	CCS	14.5*	15.6	6.7	2.2	BA/3	II
31-2	CCS	18.0	34.0	9.0	5.4	AA/4	III
73-501	CCS	42.7*	26.5	9.0	10.8	FB/2	I
101-3	CCS	28.8*	29.7	8.4	7.3	GC/4	I
140-1	CCS	52.0*	30.0	14.0	19.6	BC/5	III
147-4	CCS	23.0*	20.0*	7.0	4.3	BC/7	III
188-1	CCS	23.0*	26.0*	9.0	4.6	DD/6	II
191-1	CCS	22.0*	29.0	10.0	6.8	DD/7	II
237-1	CCS	42.0*	29.0	9.0	11.9	GA/9	III
Mule ear							
77-502	OBS	28.9*	20.0	7.6	2.0	FB/3	I
101-501	OBS	20.8*	34.3	7.3	4.5	GC/4	I
Triangular							
109-1	CCS	56.2	27.8	7.4	9.4	GB/6	III
Scraper							
24-3	CCS	29.7	22.8	17.3	9.0	BC/3	II
59-501	CCS	24.0*	26.8	12.3	10.9	DA/1	II
74-3	CCS	28.4*	30.8	9.4	11.5	FC/2	I
97-3	CCS	27.8*	24.4	6.3	5.2	GC/3	I
Spatulate							
164-2	BAS	98.0	65.0	27.0	157.9	CD/6	III
Pyramidal							
32-3	CCS	18.5*	13.2	9.4	2.2	BB/4	II
39-1	CCS	37.8*	17.3	11.0	6.1	CC/3	II
49-1	CCS	21.3*	12.7	8.7	1.6	BB/6	III
Crescentic							
100-4	BAS	22.4	9.5	5.5	1.1	GB/4	I
Fragments							
7-2	CCS	12.0*	27.2	7.5	3.0	AC/1	II
23-1	CCS	12.8*	11.4*	4.4	0.5	BB/3	II
24-4	CCS	28.4*	23.7*	9.4	4.1	BC/3	II
24-6	CCS	13.0*	17.3	6.4	1.9	BC/3	II
29-501	CCS	16.4*	19.8	4.8	1.3	AD/3	II
52-1	CCS	17.2*	11.0*	6.0	1.1	CC/4	II
54-1	CCS	12.3*	15.5*	3.8	0.8	CC/5	III
59-502	OBS	36.8	25.2*	7.7	3.9	DA/1	II
61-1	CCS	12.2*	13.8*	3.5	0.7	DC/1	II
76-6	CCS	11.6*	25.8	7.2	1.9	FA/3	I
95-1	CCS	21.9*	10.0*	4.9	0.5	GA/3	I
98-1	CCS	19.3*	22.2*	8.3	4.5	GD/3	I
105-10	CCS	6.9*	13.6*	4.9	0.4	GC/5	I
114-5	CCS	16.5*	6.7*	2.0	0.2	FB/4	I
132-1	CCS	22.0*	8.0*	7.0	0.8	AD/5	III
141-1	OBS	7.0*	9.0	5.0	0.3	BA/6	III
145-1	CCS	17.0*	7.0*	4.0	0.4	BA/7	III
182-1	CCS	17.0*	19.0*	5.0	1.1	DB/5	II
201-1	OBS	11.0*	11.0*	4.0	0.5	FD/6	III
248-2	CCS	22.0*	26.0*	8.0	5.4	GA/12	IV

measurements in millimeters
* indicates broken specimen

Table 5.7. Metric data for Narrows Site drills.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
18-2	CCS	16.8*	5.0	3.0	0.2	BA/2	II
32-501	CCS	18.5*	8.6	4.3	0.7	BB/4	II
76-5	CCS	26.7	19.7	5.4	1.6	FA/3	I
109-2	CCS	10.8*	16.0	4.0	0.6	GB/6	III
208-1	BAS	12.0*	6.0	4.0	0.3	FC/8	III

measurements in millimeters
* indicates broken specimen

Pyramidal Fragments

Three bifacially worked pyramidal-shaped fragments of unknown function were collected. Their form suggests that they are the proximal (hafting) element of a longer tool.

Crescentic-shaped

One bifacially worked tool, roughly crescent-shaped and apparently finished, was collected. Its function is unknown and no analogues have been found in the literature.

Fragments

Twenty specimens too fragmentary to classify are included in the assemblage from the Narrows Site. Of these, three are possibly projectile point fragments: proximal fragments (141-1 and 201-1) and distal fragment (182-1).

Drills

Artifacts of this class are bifacially flaked with a relatively long, thin distal section that is pointed and broad proximal end that would accommodate hafting (Figure 5.4). They are generally thought to have been used to drill holes in wood, bone and shell. Two complete specimens were collected, though one of these was broken in half (18-2 and 32-501). One proximal fragment (109-2) and one distal fragment (208-1) were also recovered (Table 5.7).

Unformed Bifaces

These specimens are generally rough, bifacially worked flakes and chunks of CCS. These may represent unfinished bifaces or, in their present form, may have been used as temporary tools. Thirty-two specimens were recovered from the Narrows Site (Table 5.8). All but two of these are CCS, the exceptions being made on basalt flakes.

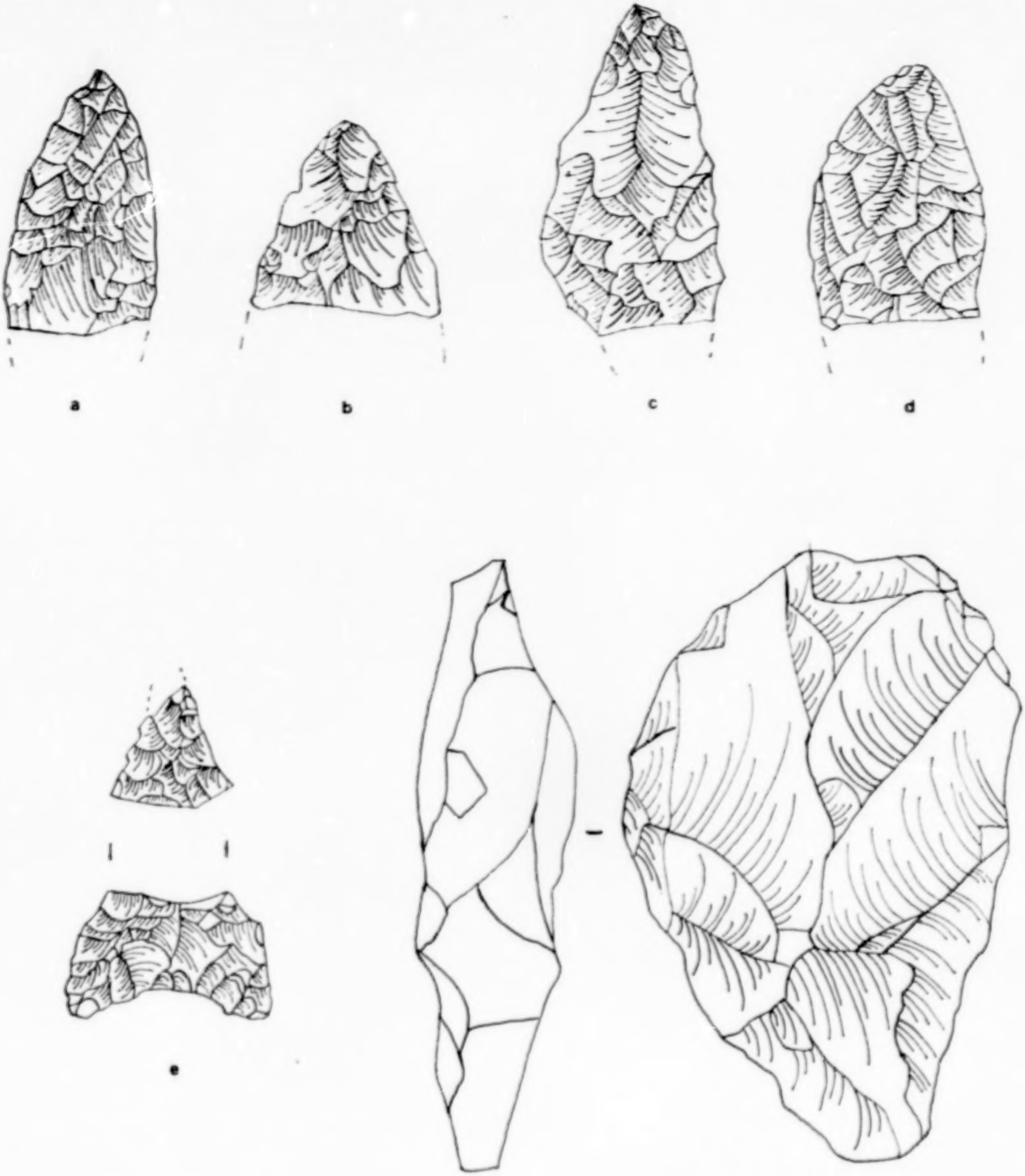

Figure 5.3. Bifaces from the Narrows Site: a-d, semi-lunate knife; e, mule ear knife; f, spatulate-shaped knife (shown actual size).

a. 73-501 c. 140-1 e. 77-502/101-501
b. 101-3 d. 237-1 f. 164-2

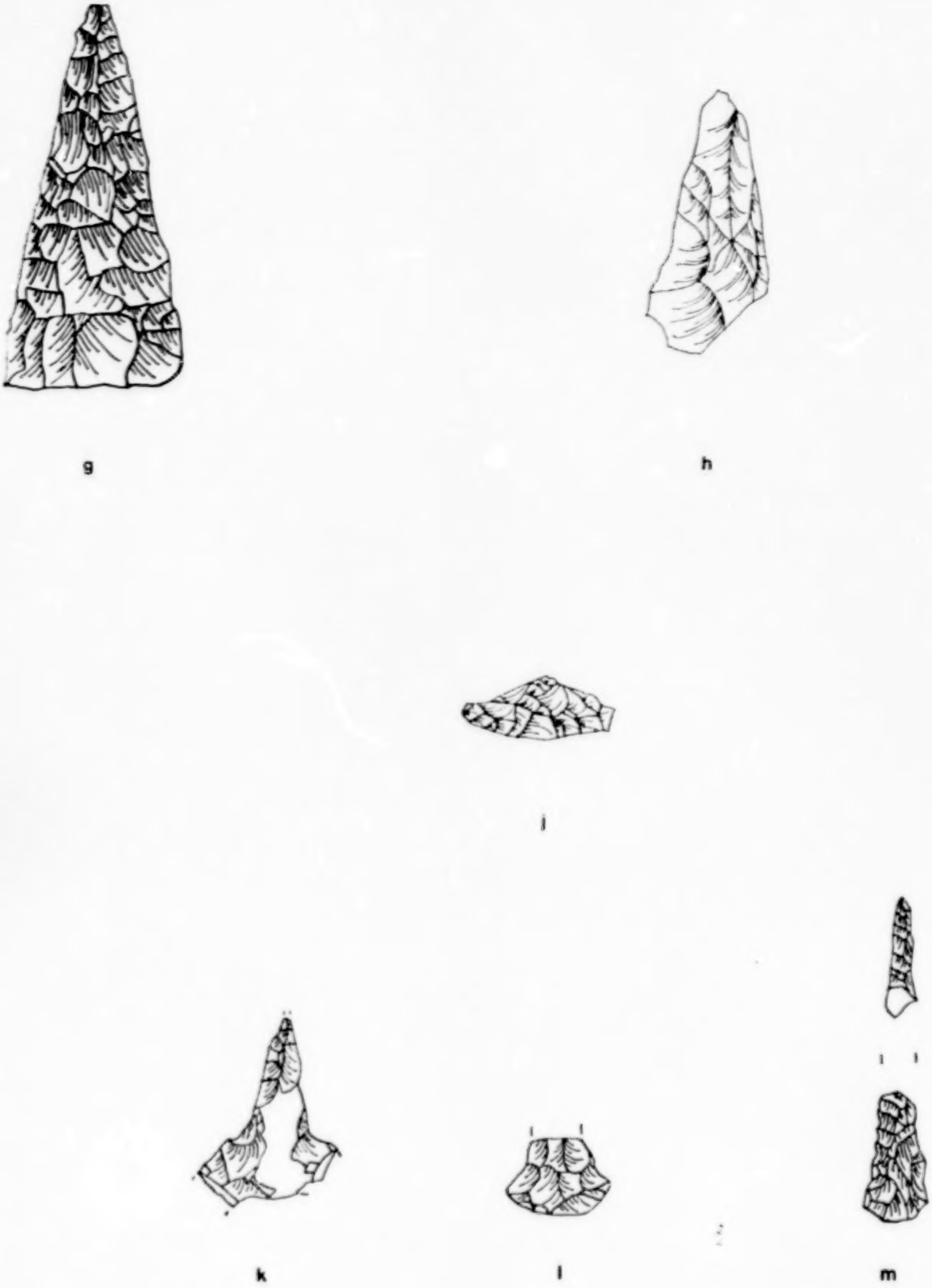

Figure 5.4. Bifaces and drills from the Narrows Site: g, triangular knife; h-i, pyramidal fragments; j, crescent-shaped; k-m, drills (shown actual size).

g. 109-1
h. 39-1
i. 49-1
j. 100-4
k. 76-5
l. 109-2
m. 18-2/32-501

Table 5.8. Metric data for Narrows Site unformed bifaces.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
6-1	CCS	38.5	27.7	8.8	9.6	AB/1	II
21-1	CCS	18.0*	15.8*	4.8*	1.3	BD/2	II
22-1	CCS	21.5*	20.2*	5.6	2.0	BA/3	II
24-2	CCS	21.3	18.0	8.0	2.8	BC/3	II
24-5	CCS	8.0*	22.2	2.4	0.7	BC/3	II
35-1	CCS	27.4*	15.5	12.4	5.6	CD/1	II
40-2	CCS	42.4	34.0	18.3	18.4	Surf.	I
43-2	CCS	24.4*	14.5*	8.6	2.6	TP-2	II
47-1	CCS	21.7*	25.7*	11.0	7.2	BB/5	III
51-1	CCS	11.6*	18.0*	9.8	2.2	CD/3	II
74-2	CCS	23.0	22.0	8.0	4.5	FC/2	I
76-2	CCS	23.0	21.8*	9.0	4.1	FA/3	I
76-10	CCS	4.4*	11.2*	7.8	0.4	FA/3	I
81-1	CCS	26.2*	20.0	8.5	3.4	EA/1	I
92-2	CCS	27.2*	26.7	11.7	9.8	GB/2	I
93-1	BAS	25.0*	20.0	7.5	3.4	GC/2	I
95-2	CCS	24.8*	17.5*	8.6	3.9	GA/3	I
95-3	CCS	15.4	11.4	2.9	0.5	GA/3	I
105-8	CCS	15.0*	7.0	3.8	0.3	GC/5	I
105-9	CCS	8.0*	10.0	10.0	0.7	GC/5	I
110-1	CCS	24.2	17.3	4.0	2.1	GD/6	III
112-4	CCS	16.0*	25.0*	11.0	4.9	FC/4	I
113-2	CCS	28.1	32.8	9.5	13.3	FD/4	I
113-3	CCS	10.3*	21.7*	10.4	1.9	FD/4	I
114-2	CCS	14.0*	17.0	10.0	2.0	FB/4	I
121-1	CCS	29.5	22.9	14.8	7.9	EA/2	I
140-2	CCS	18.0*	18.0*	6.0	1.6	BC/5	III
147-3	CCS	21.0*	25.0	9.0	4.5	BC/7	III
199-1	CCS	10.0*	12.0*	5.0	0.4	FB/6	III
234-1	BAS	34.0*	28.0*	6.0	4.8	GA/8	III
258-2	CCS	9.0*	18.0*	6.0	1.1	GB/8	III
270-1	CCS	20.0	12.0	4.0	1.0	HC/1-3	I

measurements in millimeters
* indicates broken specimen

Flake Unifaces

Included in this class of tool are intentionally modified flakes with edges that are unifacially worked. Usually the most numerous artifact type found at archaeological sites, these tools served a number of functions--cutting, scraping, graving, and shaving. The unifaces recovered from the Narrows Site have been classified according to a scheme developed by Pettigrew (cf. 1980:7-8; 1982:75-84, 160) which employs the morphology of the edge (Table 5.9).

Table 5.9. Narrows Site flake uniface data.

Edge Type	Specimen Number	Raw Mat'l	Flake Size	Prov.	Comp.
1	6-5	CCS	2	AB/1	II
1	6-6	CCS	2	AB/1	II
1	13-1	CCS	2	BB/1	II
1	19-2	OBS	2	BB/2	II
1	76-9	CCS	2	FA/3	I
1	119-2	CCS	1	FB/5	I
1	120-6	CCS	2	EC/1	I
1	165-1	CCS	2	CC/7	III
1	165-2	CCS	2	CC/7	III
1	176-1	CCS	3	DD/3	II
1	190-2	CCS	2	DB/7	II
1	198-1	CCS	2	FA/6	I
1	199-2	OBS	2	FB/6	III
1	217-1	CCS	2	FC/10	III
1	238-2	CCS	4	GC/9	III
1	246-2	OBS	2	GC/11	IV
1	254-1	CCS	5	GC/14	IV
1	257-4	OBS	2	GB/7	III
2	5-1	CCS	2	AA/1	II
2	9-1	CCS	2	AA/2	II
2	19-1	CCS	2	BB/2	II
2	19-3	OBS	2	BB/2	II
2	46-2	CCS	2	BD/4	II
2	49-3	CCS	2	BB/6	III
2	61-S01	OBS	2	DC/1	II
2	76-6	OBS	1	FC/2	I
2	88-6	OBS	2	FA/4	I
2	83-1	CCS	2	EA/1	I
2	91-1	CCS	2	FA/2	I
2	96-5	CCS	3	GD/2	I
2	99-3	CCS	2	GA/6	I
2	105-3	CCS	3	GC/5	I
2	108-2	CCS	1	GA/6	III
2	109-4	CCS	2	GB/6	III
2	116-7	CCS	2	FB/4	I
2	119-1	CCS	6	FB/5	I
2	120-2	CCS	2	EC/1	I
2	143-2	CCS	4	BC/6	III
2	176-1	OBS	2	DB/8	II
2	203-1	CCS	6	FB/7	III
2	218-1	CCS	3	FA/11	IV
2	237-3	CCS	1	GA/9	III
2	238-1	CCS	2	GC/9	III
2	249-1	CCS	2	GC/12	IV
2	251-2	CCS	3	GA/13	IV
3	8-1	CCS	2	AD/1	II
3	12-1	BAS	4	BA/1	II
3	18-1	OBS	2	BA/2	II
3	20-1	BAS	3	BC/2	II
3	27-2	CCS	2	BA/3	II
3	22-1	CCS	2	BA/3	II
3	31-1	CCS	2	BA/4	II
3	32-2	CCS	2	BB/4	II
3	38-1	CCS	3	CD/2	II
3	43-1	CCS	2	TP-2	II
3	48-1	CCS	3	BD/5	III
3	67-1	CCS	3	DD/1	II
3	72-1	CCS	3	FA/2	I
3	76-8	CCS	3	FA/3	I
3	77-3	CCS	2	FB/3	I
3	79-2	CCS	2	FD/3	I
3	88-2	BAS	5	FA/6	I
3	88-2	CCS	4	GB/1	I
3	92-1	CCS	3	GB/2	I
3	96-3	CCS	3	GD/2	I
3	96-4	CCS	3	GB/3	I
3	97-2	CCS	2	GC/3	I
3	98-4	CCS	2	GD/3	I
3	99-6	CCS	2	GA/4	I
3	102-6	CCS	3	GD/4	I
3	103-1	CCS	2	GD/4	I
3	107-2	OBS	2	GC/4	III
3	112-3	CCS	2	FC/4	I
3	112-5	CCS	2	FC/4	I
3	114-6	CCS	2	FB/4	I
3	116-3	CCS	2	FA/5	I
3	117-1	OBS	2	FC/5	I
3	117-2	CCS	2	FC/5	I
3	120-4	CCS	2	EC/1	I
3	120-5	CCS	2	EC/1	I
3	122-1	CCS	2	EC/2	I
3	122-2	CCS	2	EC/2	I
3	126-2	CCS	3	AB/4	II
3	132-2	CCS	2	AD/5	III
3	134-1	CCS	2	AB/6	III
3	140-4	OBS	1	BC/5	III
3	141-2	CCS	3	BA/6	III
3	141-3	CCS	3	BA/6	III
3	143-1	CCS	2	BC/6	III
3	145-2	CCS	1	BA/7	III
3	145-3	CCS	1	BA/7	III
3	147-7	CCS	3	BC/7	III
3	147-9	BAS	15	BC/7	III
3	151-2	CCS	3	BC/8	III
3	155-1	BAS	4	BA/10	III
3	169-1	CCS	1	CC/9	III
3	172-2	CCS	3	DD/2	II
3	178-1	CCS	4	DA/3	II
3	178-2	CCS	2	DB/4	II
3	187-2	CCS	2	DC/6	III
3	188-2	CCS	2	DD/6	II
3	190-1	CCS	2	DB/7	II
3	193-4	OBS	2	DB/8	II
3	198-2	CCS	1	FA/6	I
3	209-1	OBS	3	FC/8	III
3	210-1	OBS	1	FA/9	III
3	210-4	CCS	2	FA/9	III
3	211-1	CCS	2	FB/9	IV
3	216-1	CCS	2	FC/10	III
3	222-1	BAS	4	FA/12	IV
3	231-1	OBS	3	GA/7	III
3	232-2	CCS	2	GC/7	III
3	232-3	BAS	15	GC/7	III
3	233-1	CCS	2	GD/7	III
3	234-2	CCS	2	GA/8	III
3	237-2	OBS	2	GA/9	III
3	241-1	CCS	2	GB/10	IV
3	242-2	CCS	2	GC/10	III
3	257-3	CCS	2	GB/7	III
3	258-1	OBS	2	GB/8	III
3	259-1	OBS	2	GB/9	III
3	259-3	OBS	2	GB/9	III
3	268-1	OBS	2	HC/A&5	I
3	269-1	CCS	1	GD/6	III
3	269-2	CCS	2	GD/6	III
4	8-2	CCS	3	AD/1	II
4	59-1	CCS	2	DA/1	II
4	67-2	OBS	3	FB/1	I
4	187-1	CCS	3	DC/6	III
4	193	CCS	3	DB/8	II
5	26-1	CCS	2	AA/3	II
5	32-1	CCS	2	BB/4	II
5	38-S01	CCS	4	CD/2	II
5	39-2	CCS	2	CC/3	II
5	39-3	OBS	2	CC/3	II
5	44-1	CCS	2	TP(?)	II
5	49-2	CCS	2	BB/6	III
5	49-S01	CCS	2	BB/6	III
5	62-2	OBS	2	DD/1	II
5	96-6	CCS	2	GD/2	I
5	98-2	CCS	2	GD/3	I
5	99-2	CCS	3	GA/4	I
5	102-4	BAS	15	GD/4	I
5	106-1	CCS	2	GA/6	III
5	110-2	CCS	2	GD/6	III
5	111-2	CCS	1	FB/4	I
5	117-1	OBS	2	FC/5	I
5	123-4	CCS	2	EA/3	I
5	127-1	OBS	1	AC/4	III
5	147-5	CCS	2	BC/7	III
5	147-6	OBS	2	BC/7	III
5	151-1	CCS	3	BC/8	III
5	164-1	OBS	2	CD/6	III
5	167-2	CCS	3	CC/8	III
5	169-2	CCS	3	CC/9	III
5	175-1	CCS	3	CD/9	III
5	178-1	CCS	3	DB/4	II
5	186-1	CCS	3	DB/6	II
5	187-3	CCS	2	DC/6	III
5	193-1	CCS	3	DB/8	II
5	193-2	OBS	3	DB/8	II
5	201-1	BAS	5	FD/6	III
5	210-1	OBS	2	FA/9	III
5	210-2	CCS	3	FA/9	III
5	213-1	CCS	5	FD/9	IV
5	235-1	CCS	3	GC/8	III
5	239-1	CCS	2	GD/9	III
5	251-1	CCS	2	GA/13	IV
5	259-2	OBS	2	GB/9	III
5	260-1	CCS	2	GB/10	IV
6	6-3	CCS	1	AB/1	II
7	78-3	OBS	2	FC/3	I
7	100-1	CCS	2	GB/4	I
8	172-1	OBS	2	DD/2	II
1,3	256-1	CCS	2	GB/6	III
1,2,2	6-2	OBS	3	AB/1	II
1,3	107-4	CCS	2	GC/4	III
1,3,5	71-1	OBS	3	FD/1	I
1,3,6	76-5	CCS	3	FC/2	I
2,2	35-2	OBS	2	CD/1	II
2,2	169-1	OBS	2	CC/9	III
2,3	6-4	CCS	2	AB/1	II
2,3	116-1	OBS	2	FA/5	I
2,3	120-3	CCS	2	EC/1	[illegible]
2,3	147-8	OBS	2	BC/7	III
2,3	242-1	CCS	2	GC/10	III
2,3	242-3	QTZT		GC/10	III
2,4	112-2	CCS	3	FC/4	I
2,5	61-S02	CCS	2	DC/1	II
3,3	101-1	OBS	4	GC/4	I
3,3	140-3	OBS	2	BC/5	III
3,3	246-3	CCS	4	GC/11	IV
1-2	32-4	OBS	1	BB/4	II
2-3	7-1	CCS	2	AC/1	II
2-3	76-7	CCS	2	FC/2	I
2-3	112-6	CCS	2	FC/4	I

Table 5.10. Summary of flake unifaces by edge type, material, and size.

Edge Type	OBS 1	2	3	4	5	>5	CCS 1	2	3	4	5	>5	BAS 1	2	3	4	5	>5	QTZ	Total
1	-	4	-	-	-	-	1	10	1	1	1	-	-	-	-	-	-	-	-	18
2	1	4	-	-	-	-	2	13	4	2	-	1	-	-	-	-	-	-	-	27
3	2	9	2	-	-	-	5	39	15	2	-	-	-	-	-	2	2	2	-	80
4	-	-	1	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	5
5	-	7	2	-	-	-	1	16	10	1	1	-	-	-	-	-	1	1	-	40
6	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
7	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
8	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1.1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
1.2.2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1.3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
1.3.5	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1.3.6	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
2.2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
2.3	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	6
2.4	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
2.5	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
3.3	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3
1-2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
2-3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3
Totals	4	31	7	1	0	0	10	89	35	7	2	1	0	0	0	2	3	3	1	196

In the first column noncontiguous edges indicated with a comma (.) and contiguous edges indicated with a hyphen (-).

Among the edge types defined in this system are:

Edge Type	Description
1	Concave edge
2	Straight edge
3	Convex edge
4	Commonly referred to as "gravers," the edge is pointed by the intersection of two edges flaked on the same face
5	Commonly referred to as "endscrapers," the edge is convex at the end of a flake and is polished or crushed from use
6	Edge is pointed by the intersection of a flaked with an unflaked edge, showing use at the point
7	Notched edge, referred to as a "spokeshave."
8	Edge pointed by the intersection of two flaked edges, flaked on opposite faces

Recovered at the Narrows Site were 196 whole and fragmentary specimens of which 22% (43) are obsidian, 73% (143) CCS, 4% (8) basalt, and 0.5% (1)

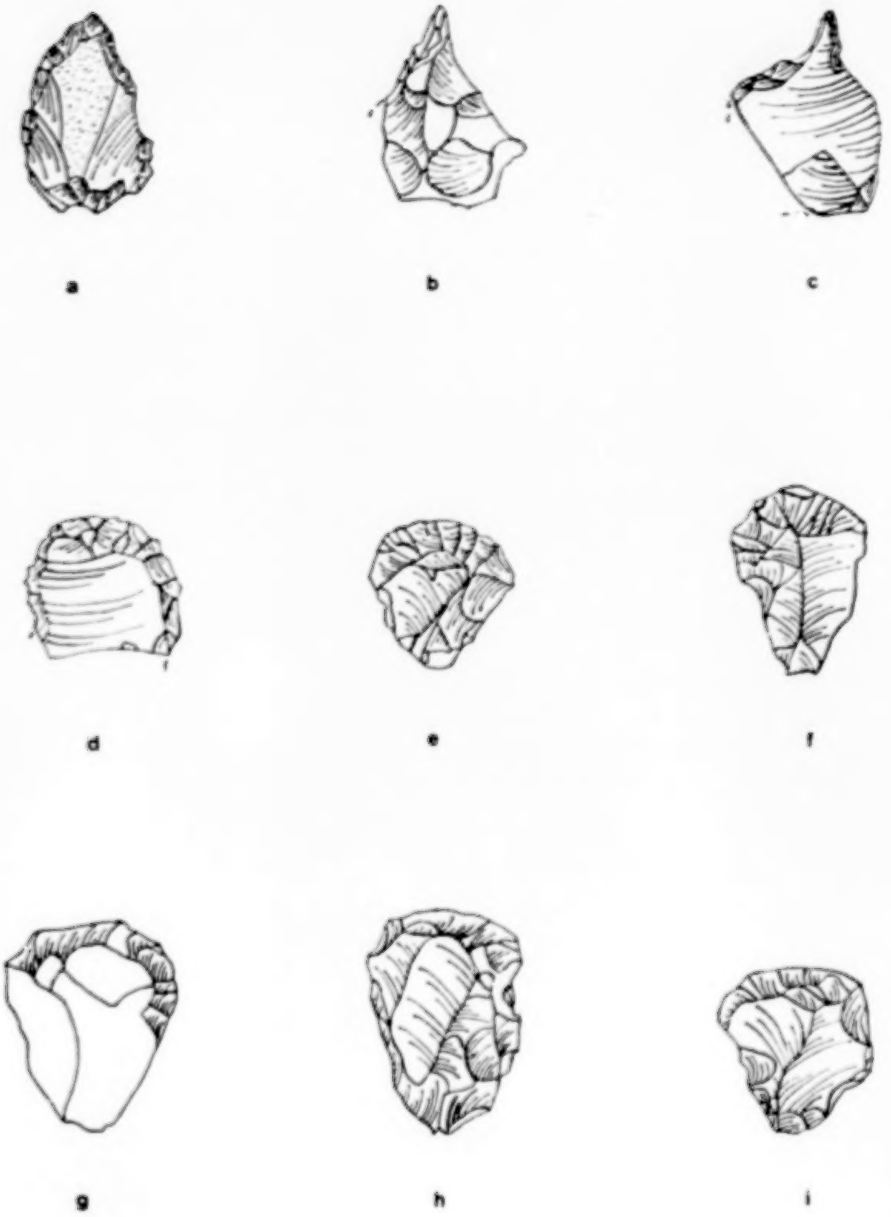

Figure 5.5. Gravers (a-c) and endscrapers (d-i) from the Narrows Site (shown actual size).

a. 67-2
b. 187-1
c. 193-3
d. 62-2
e. 98-2
f. 167-2
g. 170-1
h. 193-1
i. 210-1

Table 5.11. Comparison of flake uniface size and waste flake size at the Narrows Site.

		Flake Unifaces		Waste Flakes	
	Size	Number	%	Number	%
	1	4	(9.3)	539	(70.3)
	2	31	(72.0)	222	(28.9)
OBS	3	7	(16.2)	5	(0.6)
	4	1	(2.3)	0	
	5	0		0	
	>5	0		0	
		43		766	
	1	10	(6.9)	2416	(43.1)
	2	89	(61.8)	2755	(49.2)
CCS	3	35	(24.3)	356	(6.3)
	4	7	(4.8)	57	(1.0)
	5	2	(1.3)	9	(0.1)
	>5	1	(0.6)	0	
		144		5593	
	1	0		330	(13.0)
	2	0		1060	(41.5)
BAS	3	0		534	(20.9)
	4	2	(25.0)	304	(11.9)
	5	3	(37.5)	161	(6.3)
	>5	3	(37.5)	162	(6.3)
		8		2554	

quartzite. The majority of these artifacts (173) have a single modified edge, 18 have two or more worked edges, and 4 have two contiguous edges (Table 5.10). A comparison of the size of the waste flakes with the size of the flake unifaces (Table 5.11) makes it clear that there was a selection for flakes of 2 cm in diameter or greater.

Spall Scrapers

This class of tool is characterized by relatively thin, ovate primary flakes with an edge that has been modified either intentionally or through use. The 14 spall scrapers recovered include 13 basalt specimens and one quartzite specimen (Table 5.12).

Table 5.12. Metric data for Narrows Site spall scrapers.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
12-2	BAS	76	62	24	101	BA/1	II
54-2	BAS	68	80	18	112	CC/5	III
71-4	BAS	57	70	16	65	FD/1	I
75-501	BAS	81	63	14	113	FC/2	I
77-501	BAS	110	66	17	168	FB/3	I
98-6	BAS	113	83	14	174	GD/3	I
101-6	BAS	55	111	16	104	GC/4	I
101-8	BAS	108	55	19	174	GC/4	I
105-6	BAS	89	90	35	252	GC/5	I
123-2	BAS	85	84	22	179	EA/3	I
184-1	BAS	60	80	23	117	DD/5	II
202-1	BAS	84	80	21	132	FA/7	III
208-3	BAS	110	76	26	202	FC/8	III
214-1	QTZT	55	64	28	95	FA/10	III

measurements in millimeters

Cores and Cobble Cores

This artifact class represents chunks of raw material from which flakes have been struck, as the first stage of lithic reduction. While cores are not themselves tools, the flakes struck from them have the potential for being used as expedient tools, or being worked into bifacially flaked tools such as projectile points. Recovered at the Narrows Site were 44 cores of which 89% (39) are CCS, 9% (4) basalt, and 2% (1) quartzite (Table 5.13).

Eleven larger basalt specimens, referred to as cobble cores, were also collected (Table 5.13).

Choppers

This class of artifact includes cobble-sized specimens that generally have a single edge that is unifacially flaked (Figure 5.6), though bifacially flaked specimens occur (205-1), as does a peripherally flaked one (221-1). The flaked edges often show signs of heavy crushing. A total of 119 choppers was recovered, of which 96% (115) are basalt, 3% (4) quartzite, and 1% (1) CCS (Table 5.14).

Table 5.13. Narrows Site core and cobble core data.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
				Cores			
8-3	CCS	28	21	9	5	AD/1	II
41-1	CCS	39	48	30	70	TP-1	II
57-1	CCS	44	29	15	18	DC/1	II
60-501	CCS	38	28	21	22	DB/1	II
70-1	CCS	70	46	28	98	FB/1	I
71-5	CCS	40	30	21	23	FD/1	I
73-4	BAS	26	19	13	8	FB/2	I
75-502	CCS	33	27	22	19	FD/2	I
76-1	CCS	19	17	11	4	FA/3	I
78-1	CCS	29	17	13	9	FC/3	I
79-5	CCS	62	40	35	126	FD/3	I
79-6	CCS	18	10	7	2	FD/3	I
80-1	CCS	31	34	12	17	FA/4	I
95-3	CCS	39	24	23	20	GA/3	I
100-5	CCS	59	33	29	78	GB/4	I
102-5	BAS	28	23	9	9	GD/4	I
104-1	CCS	47	51	32	101	GA/5	I
118-501	CCS	47	27	17	24	FA/5	I
121-3	CCS	31	14	10	7	EA/2	I
125-1	CCS	69	51	40	185	AA/4	III
128-2	CCS	27	36	13	15	AD/4	III
139-5	BAS	71	45	48	136	BA/5	III
140-5	CCS	32	45	34	65	BC/5	III
141-4	CCS	42	29	17	21	BA/6	III
167-3	CCS	17	16	7	2	CC/8	III
176-2	CCS	22	38	16	18	DD/3	II
206-2	CCS	31	21	24	15	FA/8	III
207-1	CCS	32	34	18	26	FB/8	III
208-2	CCS	26	36	28	31	FC/8	III
218-2	CCS	49	36	54	112	FA/11	IV
219-1	CCS	23	26	24	15	FB/11	IV
233-2	CCS	43	41	42	68	GD/7	III
235-2	CCS	20	20	18	9	GC/8	III
238-3	CCS	52	51	50	131	GC/9	III
238-4	CCS	48	49	44	122	GC/9	III
239-2	CCS	28	33	21	25	GD/9	III
239-3	CCS	20	25	15	10	GD/9	III
239-4	QTZT	40	26	22	32	GD/9	III
249-2	BAS	33	40	30	42	GC/12	IV
251-3	CCS	38	35	29	44	GA/13	IV
253-1	CCS	55	57	36	121	GA/14	IV
258-4	CCS	27	38	25	27	GB/8	III
259-4	CCS	30	31	22	22	GB/9	III
265-1	CCS	38	27	12	18	HC/1	I
				Cobble Cores			
21-501	BAS				283	BD/2	II
22-504	BAS				314	BA/3	II
31-502	BAS				2016	BA/4	II
32-503	BAS				546	BB/4	II
76-7	BAS				160	FA/3	I
111-501	BAS				571	FB/4	I
114-501	BAS				610	FB/4	I
114-3	BAS				175	FB/4	I
116-502	BAS				442	FA/5	I
117-502	BAS				846	FC/5	I
123-5	BAS				180	EA/3	I

measurements in millimeters

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Table 5.14. Metric data for Narrows Site choppers.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
16-502	BAS	118	70	42	347	BD/1	II
22-502	BAS	70	66	32	224	BA/3	II
27-1	BAS	57	51	25	120	AB/3	II
29-502	BAS	100	73	61	574	AD/3	II
29-503	BAS	96	48	33	225	AD/3	II
32-506	BAS	99	82	46	367	BB/4	II
47-502	BAS	77	57	31	210	BB/5	III
48-501	QTZT	95	89	25	288	BD/5	III
48-504	BAS	136	64	61	840	BD/5	III
53-502	BAS	77	73	52	442	CD/4	II
71-501	BAS	94	73	22	196	FD/1	I
73-2	BAS	80	52	22	126	FB/2	I
75-3	BAS	92	49	25	118	FD/2	I
80-501	BAS	75	68	43	224	FA/4	I
92-3	BAS	98	83	32	400	GB/2	I
94-2	BAS	94	74	20	218	GD/2	I
94-501	BAS	111	87	55	675	GD/2	I
96-1	BAS	62	59	41	227	GB/3	I
98-5	BAS	80	95	51	445	GD/3	I
98-7	BAS	34*	57*	32	84	GD/3	I
98-501	BAS	113	76	40	417	GD/3	I
99-4	BAS	97	83	48	406	GA/4	I
99-5	BAS	45	36*	19	53	GA/4	I
100-2	BAS	80	71	22	167	GB/4	I
100-3	BAS	87	66	29	311	GB/4	I
102-501	BAS	72	72	40	277	GD/4	I
102-502	BAS	99	77	54	594	GD/4	I
107-3	BAS	75	64	22	176	GC/6	III
111-3	BAS	62	48	25	90	FB/4	I
111-502	BAS	112	97	69	728	FB/4	I
114-4	BAS	54	55	23	109	FB/4	I
114-502	BAS	99	83	32	347	FB/4	I
114-503	BAS	83	67	34	291	FB/4	I
116-2	BAS	84	86	27	235	FA/5	I
177-3	BAS	62	39*	25	81	FC/5	I
123-3	BAS	88	82	26	294	EA/3	I
125-2	BAS	66	84	64	397	AA/4	III
127-4	BAS	68	83	36	218	AC/4	III
139-2	BAS	90	79	35	341	BA/5	III
139-3	BAS	88	78	45	373	BA/5	III
139-4	BAS	92	78	53	496	BA/5	III
140-6	BAS	37	116	33	189	BC/5	III
140-7	BAS	80	62	26	174	BC/5	III
141-5	BAS	64	51	46	136	BA/6	III
144-1	BAS	72	90	29	258	BD/6	III
144-2	BAS	87	65	47	315	BD/6	III
162-1	BAS	91	73	50	389	CD/5	III
163-2	BAS	95	62	45	362	CC/6	III
163-3	BAS	100	64	44	360	CC/6	III
163-4	BAS	78	87	66	731	CC/6	III
164-3	BAS	69	66	51	292	CD/6	III
164-4	BAS	65	73	37	238	CD/6	III
164-5	BAS	69	88	44	371	CD/6	III
165-3	BAS	74	66	42	297	CC/7	III
167-4	BAS	130	94	47	850	CC/8	III
167-5	BAS	73	73	41	332	CC/8	III
167-6	BAS	74	66	40	352	CC/8	III
168-1	BAS	97	75	49	377	CD/8	III
176-3	BAS	51	81	24	120	DD/3	II
180-1	BAS	70	73	61	298	DD/4	II
183-2	BAS	49	72	36	227	DC/5	III
184-2	BAS	79	110	38	483	DD/5	II
184-3	BAS	87	89	59	479	DD/5	II
187-4	QTZT	56	60	22	90	DC/6	III
193-5	CCS	98	71	57	387	DB/8	II
193-6	BAS	76	74	78	477	DB/8	II
195-2	BAS	101	90	52	478	DB/9	II
195-3	BAS	115	51	60	613	DB/9	II
202-2	BAS	43	62	50	176	FA/7	III
203-2	BAS	84	65	33	153	FB/7	III
204-1	BAS	63	95	51	452	FC/7	III
204-2	BAS	59	88	28	171	FC/7	III
204-3	BAS	56	78		206	FC/7	III
205-1	BAS	96	82	41	355	FD/7	III
205-2	BAS	86	91	80	710	FD/7	III
206-3	CCS	62	68	38	196	FA/8	III
206-4	BAS	99	98	45	682	FA/8	III
206-5	BAS	99	43	33	265	FA/8	III
206-6	BAS	63	96	51	299	FA/8	III
206-7	BAS	50	74	35	181	FA/8	III
206-8	BAS	89	98	56	550	FA/8	III
206-9	BAS	75	61	41	210	FA/8	III
207-2	BAS	80	56	23	169	FB/8	III
207-3	BAS	67	77	33	245	FB/8	III
207-4	BAS	39	60	38	149	FB/8	III
208-4	BAS	61	90	38	253	FC/8	III
208-5	BAS	128	90	44	813	FC/8	III
208-6	BAS	73	94	55	369	FC/8	III
208-7	BAS	150	80	67	1178	FC/8	III
209-2	BAS	69	74	46	314	FD/8	III
209-3	BAS	76	64	22	124	FD/8	III
210-5	BAS	88	103	37	532	FA/9	III
218-3	BAS	122	121	52	996	FA/11	IV
221-1	BAS	60	60	21	75	FD/11	IV
231-2	BAS	63	86	48	408	GA/7	III
232-4	BAS	77	55	27	164	GC/7	III
232-5	BAS	91	81	69	742	GC/7	III
233-4	BAS	99	63	46	425	GD/7	III
236-1	BAS	83	104	43	495	GD/8	III
237-4	BAS	106	92	25	344	GA/9	III
238-5	BAS	75	99	98	971	GC/9	III
238-6	BAS	69	105	35	408	GC/9	III
238-7	QTZT	175	130	76	1710	GC/9	III
241-2	BAS	114	63	37	396	GB/10	IV
241-3	BAS	92	69	38	241	GB/10	IV
241-4	BAS	108	95	37	430	GB/10	IV
241-5	BAS	94	126	41	568	GB/10	IV
244-1	BAS	63	83	34	214	GA/11	IV
246-4	BAS	78	92	35	295	GC/11	IV
258-6	BAS	75	97	37	360	GB/8	III
258-7	BAS	38	58	32	91	GB/8	III
258-8	BAS	88	67	50	368	GB/8	III
258-9	BAS	67	93	57	426	GB/8	III
258-10	BAS	95	90	55	491	GB/8	III
259-5	BAS	64	50	31	78	GB/9	III
259-6	BAS	113	88	52	584	GB/9	III
259-7	BAS	147	129	49	1464	GB/9	III
266-1	BAS	86	55	27	177	HC/2	I
271-1	BAS	77	66	34	210	Surf.	I

measurements in millimeters

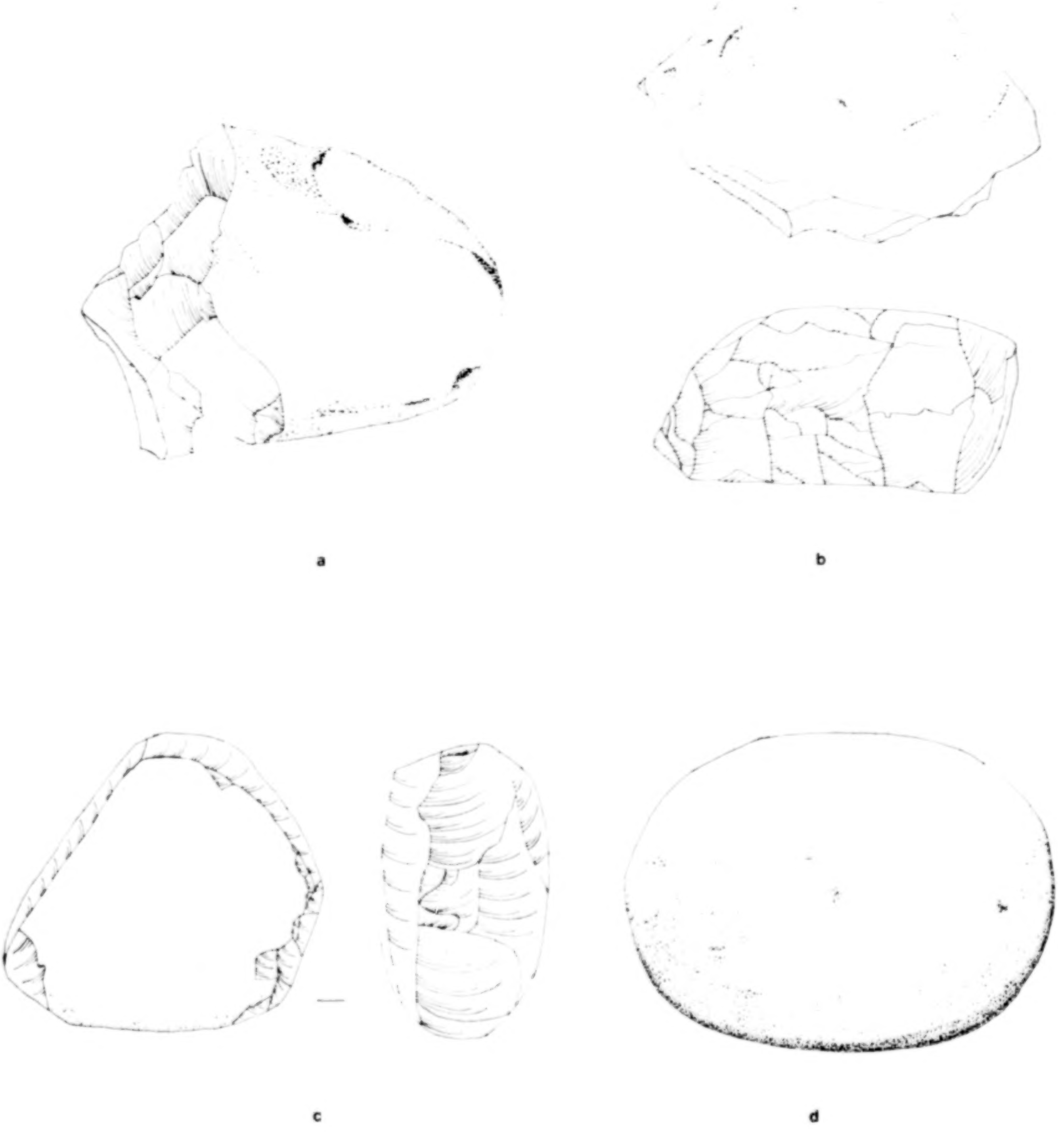

Figure 5.6. Choppers (a-b) and edge faceted cobbles (c-d) from the Narrows Site (shown 65% actual size).

a. 94-501 b. 236-1 c. 63-501 d. 236-2

Table 5.15. Metric data for Narrows Site hammerstones and pounders.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
			Hammerstones				
19-501	BAS	138	76	54	868	BB/2	II
32-505	BAS	62	50	44	196	BB/4	II
32-508	BAS	129	42	33	286	BB/4	II
47-501	BAS	93	45	32	218	BB/5	III
53-501	BAS	46*	48	29	84	CD/4	II
61-503	BAS	79	66	35	238	DC/1	II
73-3	BAS	92	70	31	277	FB/2	I
105-7	BAS	106	52	35	305	GC/5	I
123-6	BAS	54*	59	40	180	EA/3	I
126-4	BAS	112	52	55	497	AB/4	II
139-6	BAS	82*	53	37	257	BA/5	III
143-3	BAS	56*	68	47	255	BC/6	III
147-10	BAS	121	81	58	863	BC/7	III
149-1	BAS	86	47	33	212	BA/8	III
195-1	BAS	63	39	32	145	DB/9	II
201-3	BAS	104	79	30	323	FD/6	III
201-4	BAS	60	48	43	170	FD/6	III
202-3	BAS	81	73	35	322	FA/7	III
233-3	BAS	66	61	47	297	GD/7	III
235-3	BAS	98	76	46	528	GC/8	III
237-5	BAS	106	79	58	763	GA/9	III
238-8	BAS	106	80	47	624	GC/9	III
240-1	BAS	65	62	46	388	GA/10	III
241-7	BAS	90	76	30	325	GB/10	IV
251-4	QTZT	61	51	34	147	GA/13	IV
258-11	BAS	51	39	38	109	GB/8	III
			Pounders				
31-501	BAS	196	130	55	2212	BA/4	II
77-503	BAS	93*	86	50	613	FB/3	I
240-2	BAS	130	108	76	1063	GA/10	III

measurements in millimeters

Hammerstones and Pounders

The 26 hammerstones recovered from the Narrows Site generally exhibit light to moderate pecking scars at one or both ends. The three pounders collected, however, show signs of much heavier use. All but one of the hammerstones is basalt and each of the pounders is basalt (Table 5.15).

Table 5.16. Metric data for Narrows Site edge faceted cobbles.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
45-1	BAS	55*	95	40	255	Surf.	I
63-501	BAS	75	83	43	386	DA/2	II
116-501	BAS	66*	48*	43	227	FA/5	I
184-2	BAS	79	110	38	483	DD/5	II
236-2	BAS	115	83	56	886	GD/8	III

measurements in millimeters

Edge Faceted Cobbles

This class of artifact includes those cobble-sized specimens that have one or more edges that have been ground or pecked flat, i.e. faceted (Figure 5.6). Their function is variously described as associated with vegetal processing or hide working (Sims 1971) or used to prepare striking platforms (Crabtree and Swanson 1968). Five basalt specimens were recovered (Table 5.16), of which one is also a hammerstone (236-2) and another is a chopper (184-2).

Anvils

Anvils are generally cobble-sized stones with pitting on one or more faces forming a noticeable depression. Five basalt anvils were recovered (Table 5.17), of which two have hammerstone use at both ends (101-7 and 121-2) and another has one end bifacially flaked for use as a chopper (75-2).

Table 5.17. Metric data for Narrows Site anvils.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.	Comp.
48-505	BAS	164	89	67	1512	BD/5	III
75-2	BAS	85	67	40	336	FD/2	I
96-501	BAS	137	83	41	700	GB/3	I
101-7	BAS	103	46	34	238	GC/4	I
121-2	BAS	117	42	33	255	EA/2	I

measurements in millimeters

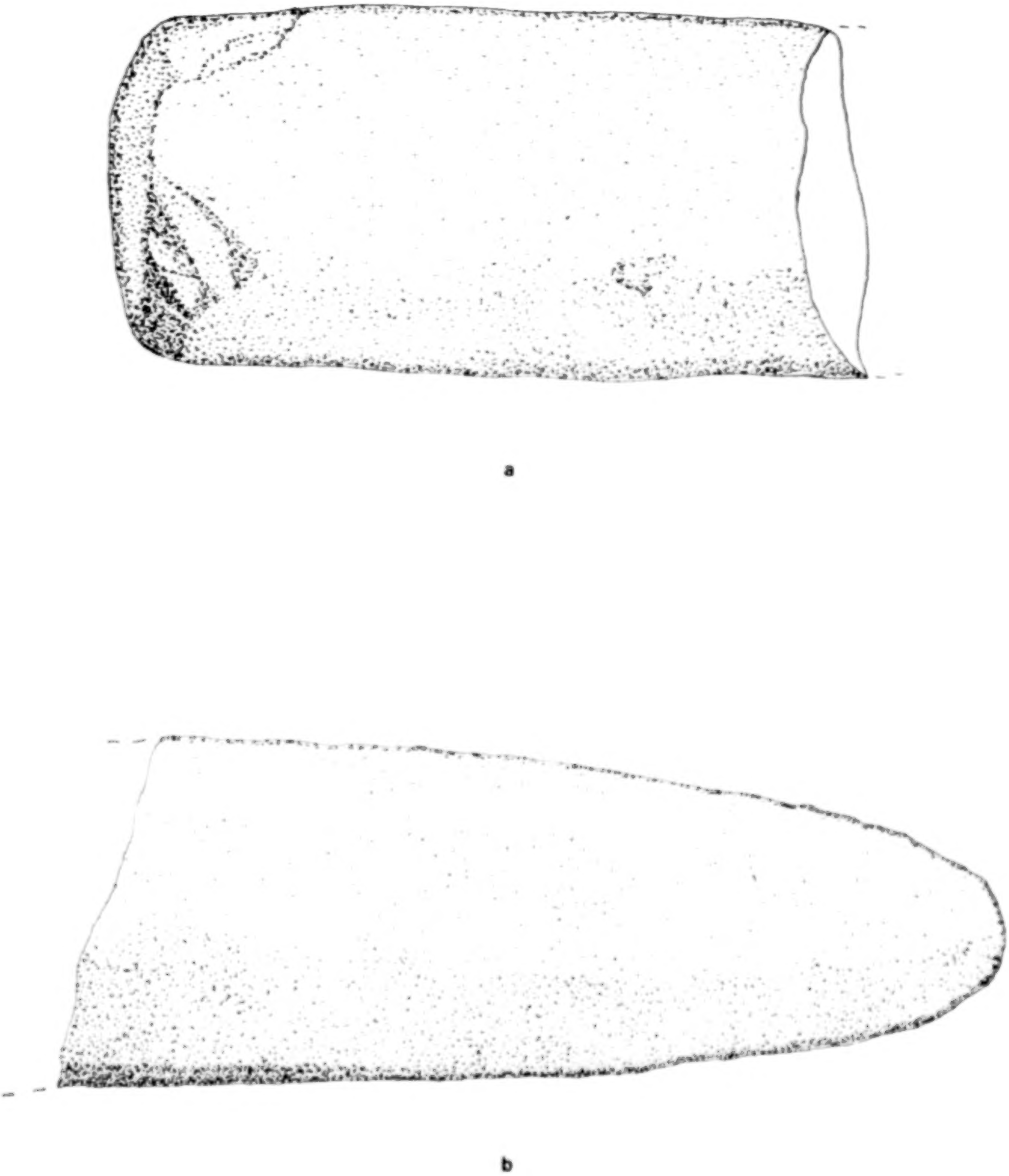

Figure 5.7. Pestles from the Narrows Site (shown actual size).

a. 32-504 b. 127-2

Table 5.18. Metric data for Narrows Site stone bowl mortars.

Specimen Number	Frag. Type	Thickness			Weight	Prov.	Comp.
		Body	Rim	Base			
32-502	Rim	27	12	--	1176	BB/4	II
40-4	Base	--	--	39	433	Surf.	II
40-5	Rim	24	12	--	224	Surf.	II
46-501	Rim/ Base	--	11	41	2548	BD/4	II
163-1	Rim	27	13	--	319	CC/6	III
258-5	Body	23	--	--	222	GB/8	III

measurements in millimeters

Table 5.19. Metric data for Narrows Site pestles.

Specimen Number	Raw Mat'l	Length	Width	Weight	Prov.	Comp.
32-504	BAS	106*	53	476	BB/4	II
40-3	BAS	133*	54	630	Surf.	I
126-3	BAS	104*	55	449	AB/4	II
127-2	BAS	131*	53	522	AC/4	III
127-3	BAS	183	62	1191	AC/4	III

measurements in millimeters

Stone Bowl and Hopper Mortars

Stone bowl mortars are steep-sided, heavy-based dishes or bowls in which vegetal material could be ground or mashed using stone or wooden pestles (Figure 5.8). The stone bowl mortars from the Narrows Site were carved and ground from an easily worked stone similar to sandstone. Three rims, one body fragment, one base, and one rim and base were collected (Table 5.18). Two specimens, 40-4 which was collected by Corliss and 46-501 which was collected during the 1986 season, represent fragments of a single bowl.

Hopper mortars are generally flat stones with dish-shaped depressions upon which a bottomless basket could be placed. Within the basket were placed seeds or nuts which could then be ground or mashed using a pestle. One

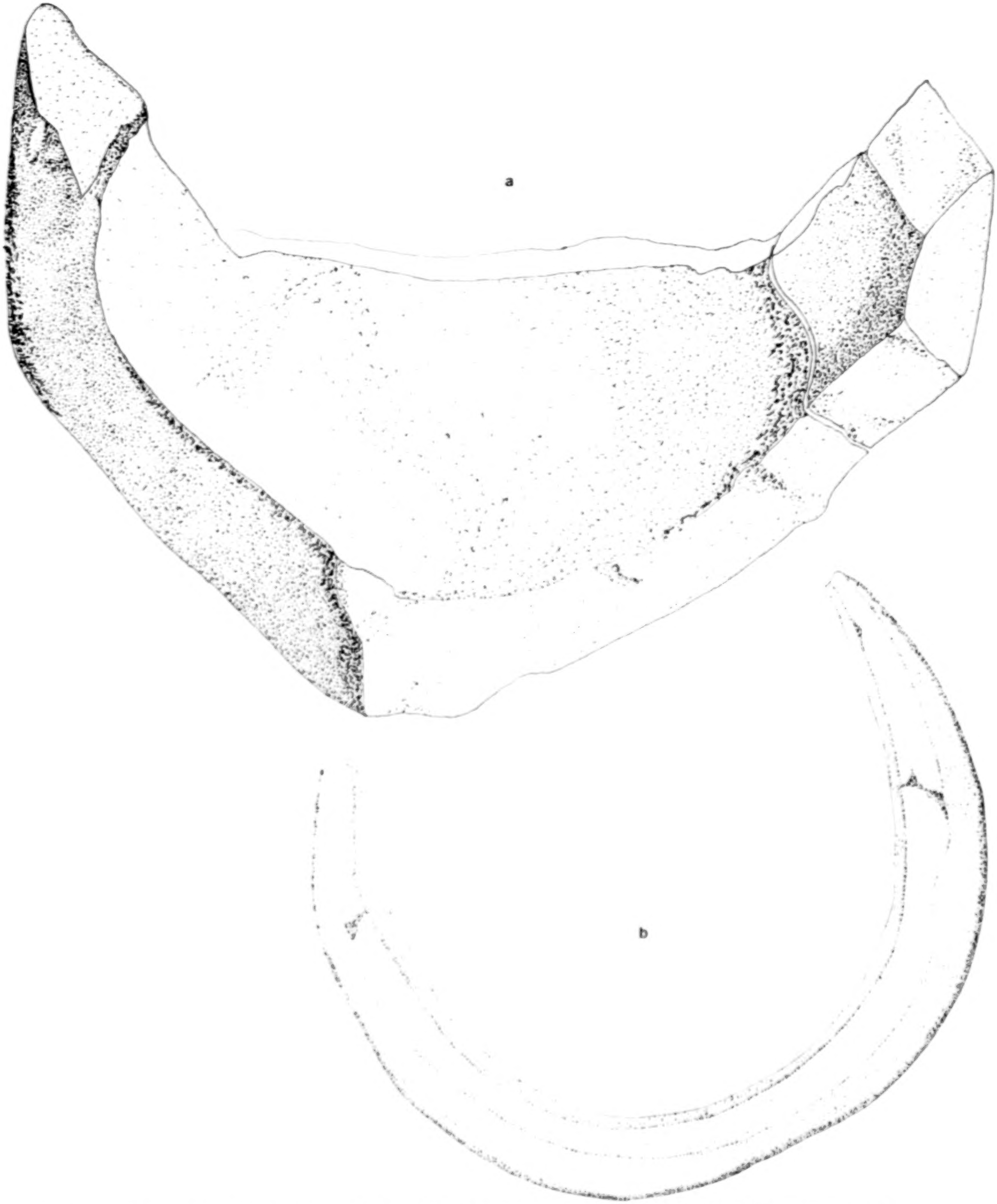

Figure 5.8. Stone bowl mortars from the Narrows Site (shown 65% actual size).

a. 40-4/46-501 b. 32-502

Table 5.20. Metric data for Narrows Site bone artifacts.

Specimen Number	Frag. Type	Length	Width	Thickn's	Weight	Prov.	Comp.
73-1	C	18	6	3	0.4	FB/2	I
74-4	M	14	7	5	0.4	FC/2	I
75-1	D	14	5	2	0.2	FD/2	I
77-1	D	18	6	4	0.4	FB/3	I
79-3	M	12	5	4	0.3	FD/3	I
79-4	D	14	8	3	0.4	FD/3	I
80-5	M	13	6	4	0.3	FA/4	I
83-2	M	14	5	4	0.2	EA/1	I
95-4	D	13	5	4	0.2	GA/3	I
112-1	M	18	5	5	0.5	FC/4	I
199-3	M	11	5	4	0.3	FB/6	III
227-1	M	7	5	3	0.1	Surf.	I
267-2	M	11	4	4	0.3	HC/3	I
268-2	D	12	5	3	0.2	HC/4-5	I
269-3	M	13	6	4	0.4	GD/6	III

C=complete; M=medial fragment; D=distal fragment
measurements in millimeters

possible hopper mortar base was recovered which was unfortunately broken near the edge of the depression. It is a portion of an oblong basalt cobble which measures 159* x 146 mm and weighs 2375 grams. Its provenience is DB/8, within the fill of the housepit, and is assignable to Component II.

Pestles

This class of artifact includes those cylindrical tools used to grind or mash vegetal products (Figure 5.7). Five whole and fragmentary basalt specimens were recovered at the Narrows Site (Table 5.19).

Abraders

Artifacts of this class are generally grooved specimens of abrasive material that were used to smooth and shape other tools of wood or bone. Specimen 214-2 is crescent-shaped and measures 31 x 11 x 15 mm. It has a set of two grooves along a concave edge. Collected from FA/10, it is assignable to Component III.

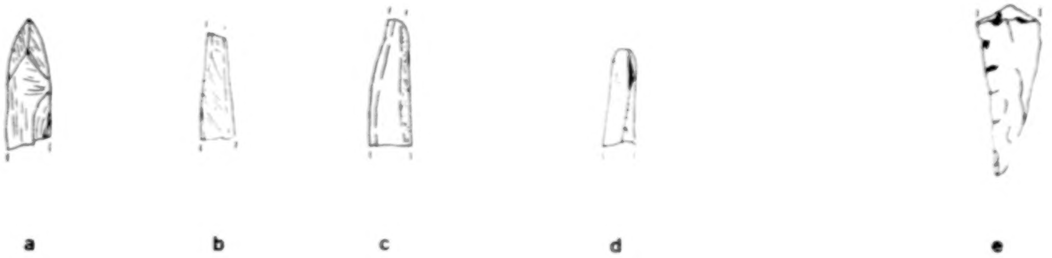

Figure 5.9. Worked bone (a-d) and baked clay figurine fragment (e) (shown actual size).

a. 73-1 b. 75-1 c. 77-1 d. 95-4 e. 102-3

Worked Bone

Fifteen pieces of worked bone were recovered at the Narrows Site (Figure 5.9), all but one of which is calcined (83-2). Each specimen appears to have been smoothed and there are numerous small striations upon their surfaces. Five specimens are pointed, nine appear to be medial sections, and one (73-1) appears to be a grooved bone point (Table 5.20).

Baked Clay Figurine Fragment

Specimen 102-3 is a reddish-brown conical fragment of baked clay, one end of which is smoothed to a point and the other roughened, apparently broken (Figure 5.9). Measuring 22 x 8.5 x 6.6 mm, it is consistent with descriptions of other baked clay figurines from southwest Oregon (cf. Deich 1982; Mack 1983, 1986, 1987). Its provenience is GD/4 and is assignable to Component I.

DEBITAGE ANALYSIS

Lithic debitage, the by-product of the manufacture of chipped stone tools, is usually the most common type of cultural debris found at archaeological sites. While not generally regarded as containing temporally diagnostic features, an analysis of its constituents can help address such questions as the lithic reduction activities conducted at a site and the relative distance to raw material sources. A presentation of this data will provide other researchers with information suitable for comparison and may aid in the discovery of regional patterns as well as defining site signatures.

Each of the 8913 pieces of debitage collected at the Narrows Site was categorized according to its a) material type, b) size, c) completeness, and d) reduction stage or type. This scheme is a modification of the one proposed by Sullivan and Rozen (1985) and is currently being used by others conducting research in the Umpqua Basin (cf. Baxter 1987) and elsewhere in Oregon (cf. Oetting 1987).

Raw Material

Three types of material are found represented in the lithic debitage at the Narrows Site. Cryptocrystalline silica (CCS) materials are by far the most common, comprising 62.7% (5593) of the debitage. Basalt is represented by 28.6% (2554) and obsidian by 8.5% (766).

Both CCS and basalt are locally abundant raw materials, occurring as cobbles in gravel bars of the river. These materials may also be found in nearby outcrops. Prehistoric quarries where CCS was collected are reported in the Umpqua Basin. On the other hand, obsidian is not reported as locally occurring and its presence as debitage and finished tools in Umpqua Basin archaeological sites suggests its transportation into the area by human means. Its relative scarcity at the Narrows Site reflects this situation.

Flake Type

Individual debitage specimens were sorted according to their reduction stage or type. Four stages are recognized and include a) primary flakes with cortex covering the entire dorsal surface, b) secondary flakes with cortex covering a portion of the dorsal surface, c) interior flakes with no cortex present, and d) debris or angular waste, which includes specimens that do not have the characteristics of flakes, tools, or cores. The summary of this data is presented in Table 5.21.

As may be expected at a site where tool manufacture and repair are undertaken, rather than core reduction, the vast majority of the flakes of all material types are interior flakes. The greater proportion of primary and secondary basalt flakes may represent the heavier class of the tools manufactured from this raw material.

Presence/Absence of Platform

The presence or absence of a striking platform was recorded for each specimen (Table 5.22). In the Sullivan and Rozen scheme (1985) it is thought that tool manufacture is represented by the presence of large numbers of flake fragments and broken flakes; core reduction is indicated by large numbers of complete flakes and debris.

Table 5.21. Debitage summary -- flake types.

	Flake Types				
	P	S	I	D	Totals
Obsidian	10 (1.3)	26 (3.3)	706 (92.1)	24 (3.1)	766 (8.5)
CCS	40 (0.7)	101 (1.8)	3982 (71.1)	1470 (26.2)	5593 (62.7)
Basalt	203 (7.9)	867 (33.9)	1233 (48.2)	251 (9.8)	2554 (28.6)
	253 (2.8)	994 (11.1)	5921 (52.3)	1745 (19.5)	8913

Key: P=primary flake; S=secondary; I=interior; D=debris
n / (%)

Table 5.22 Debitage summary -- presence/absence of platform.

	Platform			
	P	A	D	Totals
Obsidian	396 (51.6)	346 (45.1)	24 (3.1)	766
CCS	1292 (23.1)	2831 (50.6)	1470 (26.2)	5593
Basalt	814 (31.8)	1489 (58.3)	251 (9.8)	2554
	2502 (28.0)	4666 (52.3)	1745 (19.5)	8913

Key: P=platform present; A=platform absent; D=debris
n / (%)

Table 5.23 Debitage summary -- flake size.

	Size (cm)						
	1	2	3	4	5	>5	Total
OBS	539 (70.3)	222 (28.9)	5 (0.6)				766
CCS	2416 (43.1)	2755 (49.2)	356 (6.3)	57 (1.0)	9 (0.1)		5593
BAS	333 (13.0)	1060 (41.5)	534 (20.9)	304 (11.9)	161 (6.3)	162 (6.3)	2554
	3288 (36.8)	4037 (45.2)	895 (10.0)	361 (4.0)	170 (1.9)	162 (1.8)	8913

n / (%)

As Table 5.22 indicates, the debitage collected at the Narrows Site does not seem to fit this neat pattern. It is possible that with the assemblages from additional sites in the region similarly analyzed, a pattern will develop that will aid in the interpretation of these results.

Debitage Size

Each piece of debitage was measured by placing it upon a grid of concentric circles measuring .5 through 8 cm in diameter. It should be noted that all of the fill at the Narrows Site was screened through 1/4 inch mesh (.6 cm). As may be seen in Table 5.23, the majority of the flakes are 2 cm or smaller. Of the larger flakes represented, basalt debitage appears to reflect its use as a material for heavier tools.

FAUNAL ANALYSIS

(Ruth L. Greenspan)

The faunal assemblage from the Narrows Site was identified using comparative skeletal materials at the Mammals Division of the National Museum of Natural History, Smithsonian Institution and the Condon Museum of Geology, University of Oregon. The data were cataloged and analyzed using a microcomputer-based specialized file management program called Animals, written by Doug Campana and Pam Crabtree.

Table 5.24. Identified vertebrate Taxa from the Narrows Site.

		Components		
Taxon	I	II	III	Total
Deer	2	1		3
Artiodactyl	2	7		9
Undetermined large mammal	214	20	16	250
Undetermined mammal	2			2
Undetermined bird	1			1
Salmonid	2			2
Undetermined species	6			6
	229	28	16	273

The faunal assemblage from the Narrows Site consists of 273 specimens. These specimens are fairly well preserved, but quite fragmentary and largely not identifiable beyond quite broad taxonomic levels. More than 90% of the assemblage was categorized as undetermined large mammal, and it is quite likely that the majority of these specimens represent deer. Table 5.24 shows the frequency of different taxa identified at the Narrows Site.

CHAPTER 6

RADIOCARBON DATES FROM THE NARROWS SITE

Nine radiocarbon assays date the cultural deposits excavated at the Narrows Site. These dates were returned on charcoal collected from cultural features as well as from strata associated with artifacts. The radiocarbon dates range from 90 ± 70 BP to 6270 ± 130 BP (Table 6.1). Only one of these appears to be spurious: Sample 87-DO153-4, collected from approximately 60 cm below the surface, returned a date of 120 ± 50 BP; it was a burned root or bark and is presumed to be intrusive.

Of the remaining dates, the date of 1020 ± 60 BP returned on charcoal collected from 80 cm below the surface at first appears to be anomalous in relation to the date of 5090 ± 80 BP which was also from a charcoal sample at approximately the same depth; however, the first date is from a more recent intrusive house pit (Feature 4). Hence, each of these eight radiocarbon dates is stratigraphically compatible with one another.

Table 6.1. Radiocarbon assays from the Narrows Site.

Sample #	Date BP	Lab #	Provenience	Component
86-DO153-5	90 ± 70	Beta 17819	GD-2	I
87-DO153-4*	120 ± 50	Beta 22444	FC-6	---
86-DO153-2	140 ± 60	Beta 17816	FC-3	I
86-DO153-3	320 ± 50	Beta 17817	FD-3	I
86-DO153-4	330 ± 80	Beta 17818	FA-4	I
86-DO153-1	450 ± 70	Beta 17815	BB-4	II
87-DO153-2	1020 ± 60	Beta 22442	DB-8	II
87-DO153-3**	5090 ± 80	Beta 22443	CD-8	III
87-DO153-1	6270 ± 130	Beta 22441	GA/C-11/12	IV

(The dates are given as radiocarbon years before 1950 AD.)

* This assay was run on burned root or bark and is apparently spurious.

** This sample was given extended counting time.

Not only is there stratigraphic consistency among the dates (Figure 6.1), they also appear to be reasonable for the artifacts associated with them. The

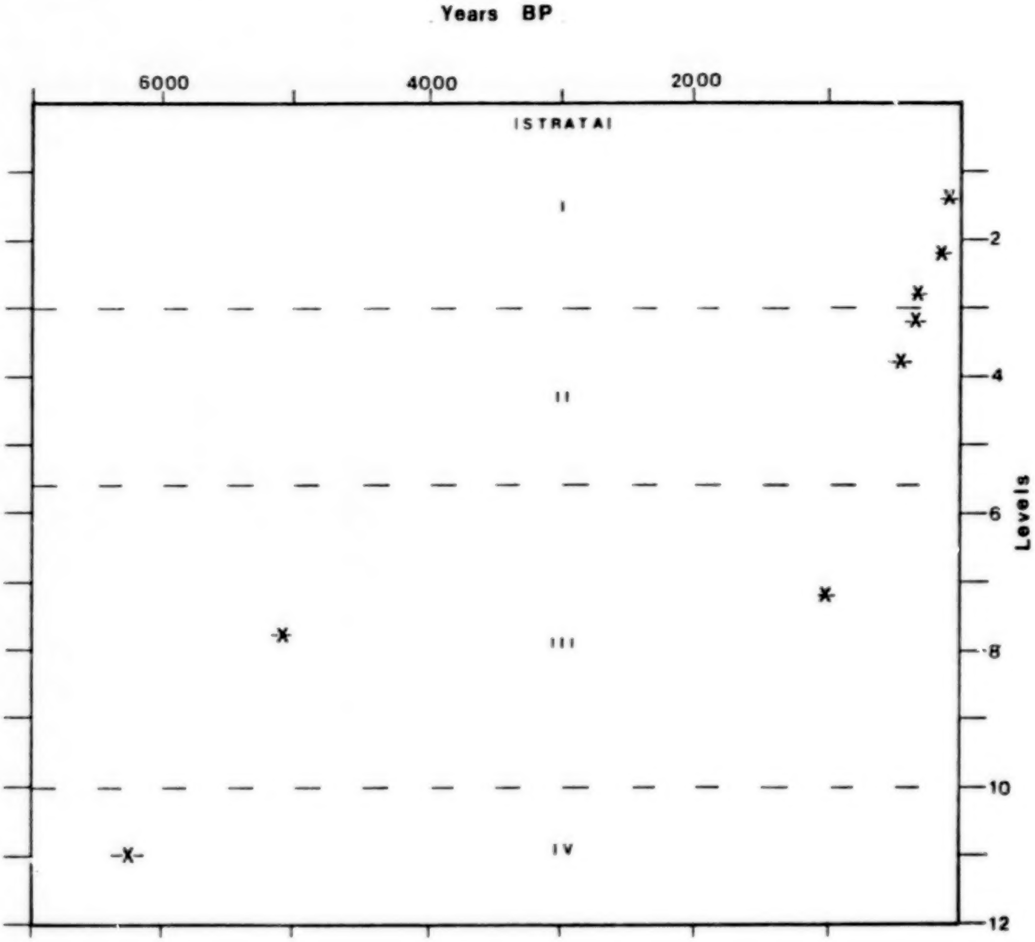

Figure 6.1. Stratigraphic position of Narrows Site radiocarbon dates.

more recent dates, those within the last 330 years, are associated with Gunther Barbed and Tanged projectile points as well as other narrow-necked specimens. Elsewhere in the Umpqua Basin these projectile point types are found associated with dates no earlier than approximately 600 years ago (cf. Minor 1987; Baxter 1987; Baxter and Minor 1987; O'Neill and Barner 1987). Broad-stemmed projectile points, such as those recovered from the lower levels at the Narrows Site, are typically associated with radiocarbon dates of Middle Archaic age--over 2000 years ago (cf. Minor 1987; Churchill 1986).

In the following chapter, the cultural components assigned C-14 ages in Table 6.1 are defined in detail.

CHAPTER 7

CULTURAL FEATURES AT THE NARROWS SITE

Subsurface testing at the Narrows Site resulted in the identification of six cultural features. These include a human burial, two fire pits, a house pit, a cobble lens, and a midden. Charcoal collected from the midden deposit, house pit, and fire pits allows each of these to be radiometrically dated. A discussion of these dates is presented in the preceding chapter. The burial and cobble lens may be relatively dated.

HUMAN BURIAL

One human burial was exposed during the 1986 field season and subsequently excavated during the Spring of 1987. Identified as Feature 1, the skeletal material found in TPs G and H represents a 32 to 37 year old female and is associated with the cultural material of Component I. This individual had been buried in a 35 cm deep basin-shaped pit excavated from the interface of Stratum I and Stratum II. The 105 x 90 cm oval pit terminated within Stratum III. The burial was found to be tightly flexed, placed on its left side, with the head situated to the south. No grave goods were found associated with the human remains. A complete analysis is presented in the following chapter of this report.

Radiocarbon dates from strata I and II in units F and G suggest a date of between 140 and 330 years ago for this burial.

FIRE PITS

Two fire pits were identified during excavation at the Narrows Site. Feature 2, located in units F and G at a depth of 110 to 120 cm below the surface, consisted of patches of grey sand containing charcoal and small fragments of calcined bone (Figure 7.1). The charcoal collected from this feature returned a date of 6270 ± 130 BP which also provides a date for the associated tools and debitage of Component IV.

Feature 3, located in TP-C at a depth of 75 cm below the surface, was a rectangular-shaped basin surrounded by bisque (Figure 7.2). At this depth chunks of bisque were noted elsewhere in unit C. A radiocarbon date of 5090 ± 80 was returned on a small charcoal sample recovered from the fire pit which is associated with the cultural material of Component III. No faunal remains were found associated with this feature.

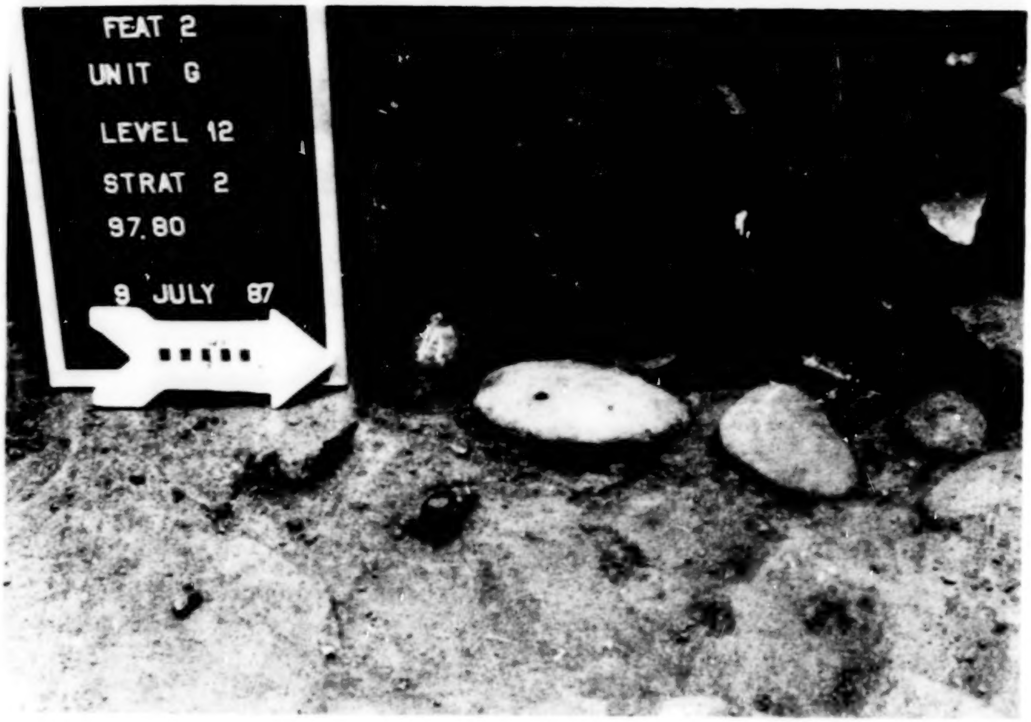

Figure 7.1. Feature 2 fire pit in TPs F and G.

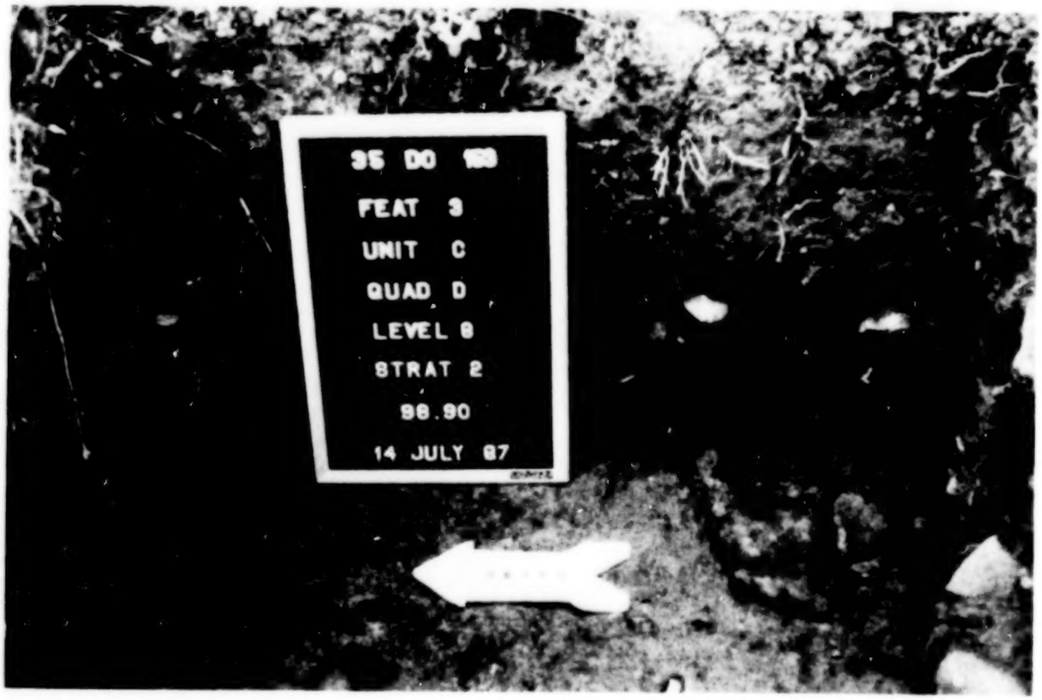

Figure 7.2. Feature 3 fire pit in TP-C.

HOUSE PIT

Identified as Feature 4, the edge of a house pit was excavated in TP-D. It appears to begin approximately 40 cm below the surface and continues to approximately 85 cm below the surface excavated into the lighter colored Stratum III. Excavation records and an analysis of the distribution of lithic debris in TP D indicates that only a portion of the house pit was excavated; the east half of the unit contains a much greater amount of material than the west half. Furthermore, the cobble lens encountered throughout the site is absent in the east half of the unit. The floor of the house pit was littered with fire-cracked rock and tools (Figure 7.3). Among the tools recovered were choppers, endscrapers, a graver and utilized flake, a hammerstone, and a broken hopper mortar base. Charcoal collected from the floor of the house pit returned a date of 1020 ± 60 BP and is associated with the other tools recovered from Component II. The north profile of TP-D would suggest that a bench ran along the edge of the house pit.

MIDDEN

The charcoal laden silt of Stratum I at the north end of the tested area, TPs E through H, contained fire-cracked rock, the majority of the faunal material recovered from the site (as described in Chapter 5), and a large number of artifacts and debitage. This 10.3 m^2 area is interpreted as being a portion of a midden of approximately 30 cm in thickness and is designated Feature 5. Overprinting of the Stratum II soil beneath the midden as well as the looseness of the two strata may be accounted for by bioturbation; earthworms have been found to be extremely responsive to midden conditions and are able to rework such soils to a considerable degree (Stein 1983). Radiocarbon dates from charcoal collected in association with this stratum are 90 ± 70 and 140 ± 60.

COBBLE LENS

The rounded cobbles of strata II and III occur as a lens, forming almost a "pavement" across the tested area of the site. Rounded cobbles are said to occur naturally in the local soils (Gerry Coleman pers. com.), presumably the product of the weathering of the underlying basalt bedrock from which the soil is derived. The discovery of intact features and cultural material below the cobble lens morphologically different from that recovered above the lens, however, raised doubt that this feature was entirely the product of natural processes. Associated with the unmodified cobbles are large numbers of heavy stone tools which include choppers, cobble cores, and hammerstones. Lithic debitage of obsidian, CCS, and basalt is found throughout the deposits at the site. Furthermore, although angular, gravel-sized pieces of basalt colluvium occur frequently in the fill of strata I through III, rounded pebbles and cobbles smaller than fist-size are uncommon, suggesting that a sorting process occurred.

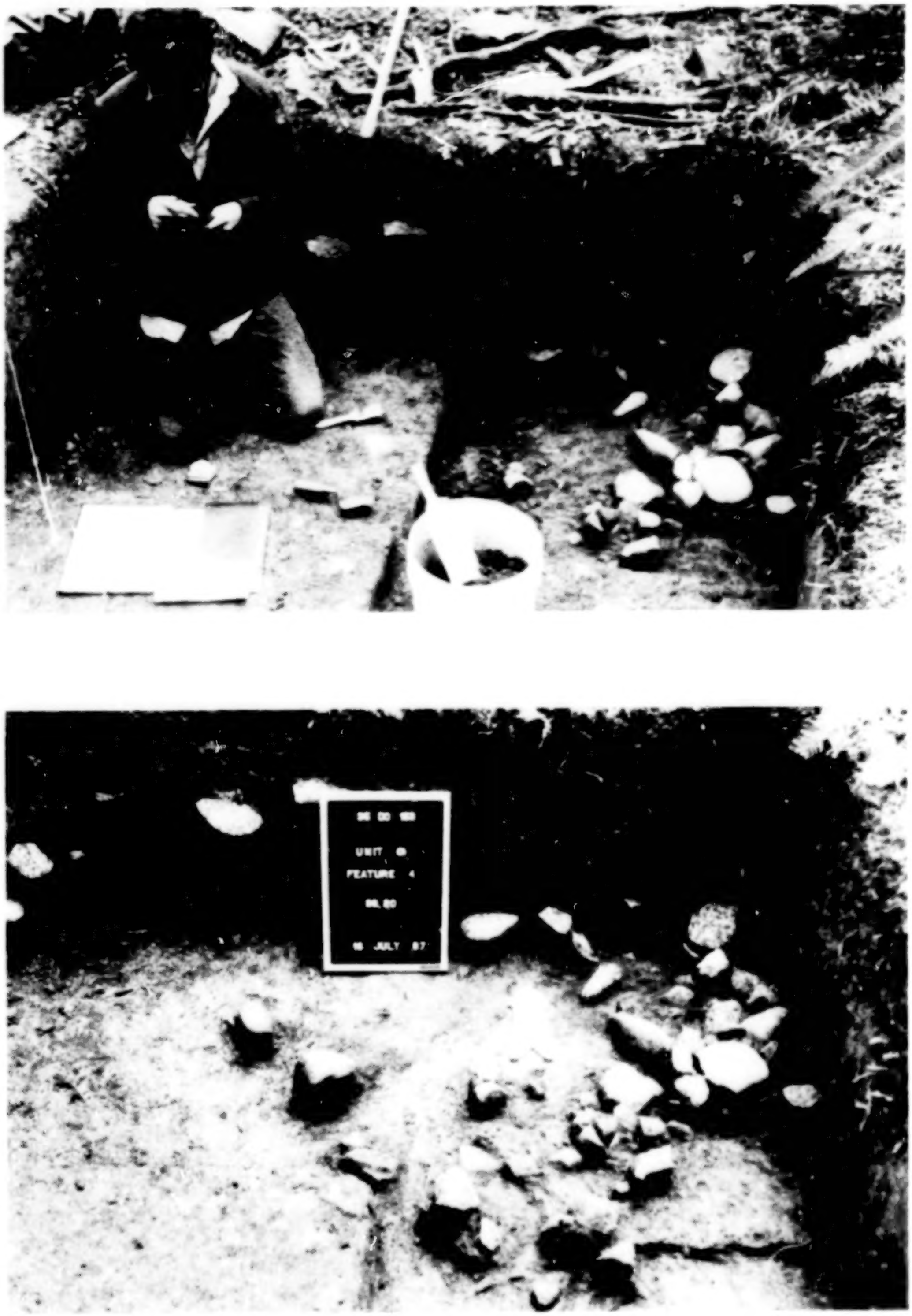

Figure 7.3. Floor of Feature 4 house pit in TP-D.

The cobbles may, in large part, represent raw material from which cobble tools were manufactured as well as rock used for heating. The activities at this portion of the site that contributed toward forming the cobble lens seem to have begun at least 1020 years ago when the house pit was in use and to have stopped between 450 and 330 years ago.

CHAPTER 8

OSTEOLOGICAL ANALYSIS OF THE SKELETAL REMAINS FROM THE NARROWS SITE

by Brian E. Hemphill

Excavation of the human remains was conducted between May 8 and 10, 1987. Following their removal, the skeletal materials were transported to the physical anthropology laboratory at the University of Oregon for further analysis. After the completion of the analysis the remains were returned to the Roseburg District BLM and subsequently reinterred by Mike O'Dell of the Cow Creek Band and Isaac Barner.

BURIAL LOCATION

The burial, designated Feature 1 of site 35DO153, was located 70 cm below the surface in quad D of unit G. The burial was located in an oval-shaped pit which measured 90 cm N-S x 105 cm E-W. It began 30 cm below the surface. The burial pit appears to have been dug through what has been identified as a midden deposit. No grave goods were found associated with this feature.

BURIAL POSITION

The burial, as can be seen in Figure 8.1, was interred lying on its left side with the body oriented in a north-south direction. The head was resting upon the left temporal, with the face oriented NW. The right arm was placed beside the body with the elbow flexed 30 degrees, so that the lower arm and hand were placed across the chest. The left arm was represented only by the left humerus, in a position which indicates that it was placed alongside and somewhat beneath the body. The right and left legs were flexed posteriorly at the hip and were oriented parallel to one another. The bones of the lower leg --the left tibia and fibula, as well as the right tibia and fibula--were found adjacent and parallel to the two femora. This position of the lower legs represents an anomaly to the overall configuration of the interment. The bones of the upper body and the two femora are all in proper anatomical configuration, suggesting that this individual was buried on its left side with the soft tissue intact. However, the position of the lower legs suggests that either the bones have been dramatically disturbed since initial interment, or that the lower leg was removed from the body at the time of burial and placed alongside the upper leg. The lack of stratigraphic evidence for the disturbance of the northern portion of the burial pit, and the proper anatomical placement of the two fibulae and tibiae relative to the femora

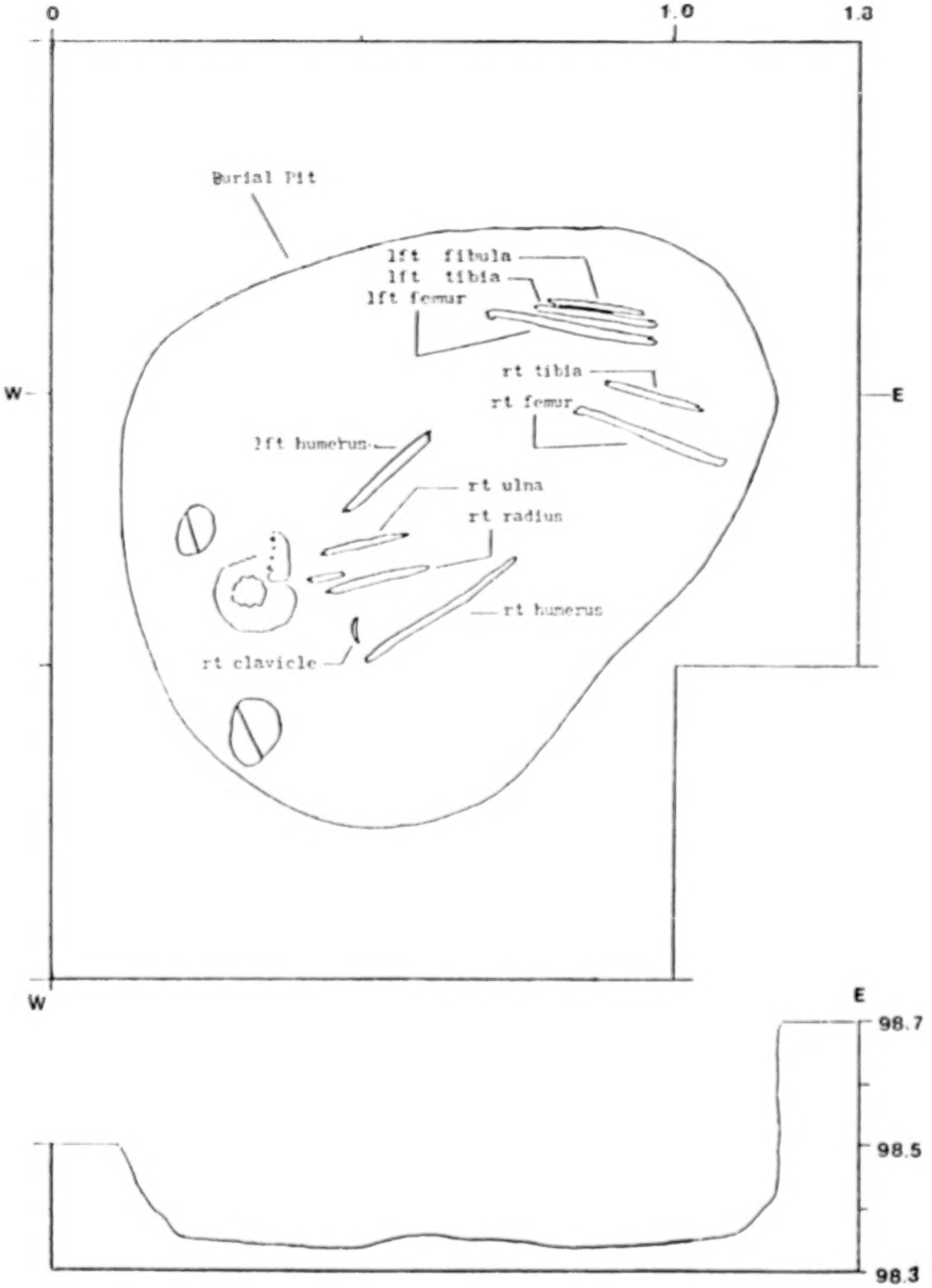

Figure 8.1. Plan and profile views of the Narrows Site burial.

strongly suggest that this unusual placement is not the result of post-interment disturbance, but was the result of a removal of the lower leg at the time of burial with the soft tissue intact.

CONDITION AND PRESERVATION

Overall, the condition of the burial was very poor, the bones being extremely fragile and friable. This was due to their frequent inundation and the acidic nature of the soil. Those bones which were largely composed of cancellous tissue, or spongy bone, such as the vertebrae, ribs, and the metaphyses of the long bones were not preserved. Only those bones with a high cortical content of hard lamellar bone were preserved. These include the bones of the cranial vault and the diaphyseal portions of the long bones.

DESCRIPTION

The following is an itemized description of the bones recovered from Feature 1.

I. Axial Skeleton

The axial skeleton of this individual was very poorly preserved, with none of the elements of the spine, pelvis, or ribs preserved. The cranium was moderately well preserved, with all of the bones of the neurocranium, except for the frontal, preserved in fragmentary condition. The elements of the splanchnocranium (face) were completely absent. The mandible was preserved in fragmentary condition and a total of fourteen mandibular teeth were recovered. In addition, three maxillary molars in extremely poor condition were recovered.

Occipital

The occipital was the best preserved element of the neurocranium. The superior portion (squamous) of the occipital preserved lambda and the external occipital protuberance, the latter of which was observed to be quite gracile. Closure of the lambdoidal suture on either side of lambda was low to moderate and rated 2 on the scale of Todd and Lyon (1924). The transverse nuchal lines were preserved and were quite gracile. No abnormalities on the external surface of the occipital were observed. Internally, the transverse sulcus as well as the inferior portion of the sagittal sulcus were preserved. The cruciate eminence was also well preserved.

Parietals

The left and right parietals were in extremely poor condition. In both, the superior third was preserved and the grooves for the middle meningeal arteries were clearly observable. The posterior one-third of the sagittal suture was preserved and closure rated 2 according to the scale of Todd and Lyon. Posteriorly, in both the left and right parietal, the bone is extremely thin (3 mm). Anteriorly there is considerable thickening. At one point in

Table 8.1. Inventory of skeletal material, Feature 1, 35DO153.

	Condition
I. Axial Skeleton	
a) Neurocranium	
Occipital	Fragmentary
Left Parietal	Fragmentary
Right Parietal	Fragmentary
Left Temporal	Fragmentary
Right Temporal	Fragmentary
b) Mandible	Fragmentary
II. Upper Limb	
a) Right	
Humerus	Fragmentary
Radius	Fragmentary
Ulna	Fragmentary
Clavicle	Fragmentary
b) Left	
Humerus	Fragmentary
III Lower Limb	
a) Right	
Femur	Fragmentary
Tibia	Fragmentary
Fibula	Fragmentary
b) Left	
Femur	Fragmentary
Tibia	Fragmentary
Fibula	Fragmentary

the superior left parietal, proximal to the sagittal suture, there is a thickening of the diploe without any change in the thickness of the outer or inner cortical layers, yielding a measurement of 11 mm.

Temporals

The temporals were in extremely poor condition. In both the right and left temporal the superior (squamous temporal) portion was not preserved. The inferior (petrous) portion of the right temporal was recovered in fragmentary condition. The right temporo-mandibular joint was preserved and was rather shallow with no evidence of ante-mortem degeneration. Internally, the arcuate eminence and the carotid canal of the right temporal were well preserved.

The left temporal was even more fragmentary than the right. Like the right temporal, only a portion of the inferior (petrous) portion was preserved. The left temporo-mandibular joint, like that of the right, was quite shallow and evinced no evidence of ante-mortem degeneration. Internally, a portion of the arcuate eminence was preserved.

The mastoid processes of the right and left temporals were not recovered.

Table 8.2. Measurement of skeletal elements, Feature 1, 35DO153.

Element	Measurement	Value
Right Femur	a) Total length of fragment	304 (mm)
	b) A-P diameter of midshaft	21
	c) M-L diameter of midshaft	22
	d) Subtrochanteric A-P diameter	22
	e) Subtrochanteric M-L diameter	29
	f) Platymeric index	75.8
	g) Maximum A-P diameter	24
Left Femur	a) Total length of fragment	294
	b) A-P diameter midshaft	22
	c) M-L diameter midshaft	23
	d) Maximum A-P diameter	24
Right Tibia	a) Total length of fragment	206
	b) M-L diameter of nutrient foramen	19
Left Tibia	a) Total length of fragment	241
	b) A-P diameter at nutrient foramen	29
	c) M-L diameter at nutrient foramen	19
	d) Platycnemic index	65.5
Right Fibula	a) Total length of Fragment 1	52
	b) Total length of Fragment 2	64
Left Fibula	a) Total length of Fragment 1	47
	b) Total length of Fragment 2	26
	c) Total length of Fragment 3	20
	d) Total length of Fragment 4	18
	e) Total length of Fragment 5	19
	f) Total length of Fragment 6	12
Right Humerus	a) Total length of fragment	246
	b) A-P diameter at midshaft	19
	c) M-L diameter at midshaft	17
	d) Steele's (2-3)	238
	e) Muller's (c-d)	202
Left Humerus	a) Total length of fragment	129
Right Ulna	a) Total length of fragment	51
Right Radius	a) Total length of Fragment 1	52
	b) Total length of Fragment 2	64
Right Clavicle	a) Total length of fragment	77

Table 8.3. Dental analysis of Feature 1, 35DO153.

Tooth	MD	BL	Wear	Note
			Mandibular Dentition	
RM3	10.0	10.5	2/35-45	Rotated 40 degrees
RM2	10.0	10.0	2/35-45	Hollowed center
RM1	10.1	11.2	2/25-35	Unusually unworn
RPM2	6.2	8.0	Ring of enamel	
RPM1	NM	NM		
RC	NM	NM	Crown broken	Extremely eroded
RI2	NM	NM	Extremely worn	Pulp exposed
RI1	NM	NM	Crown broken	
LI1	.... missing...			
LI2	NM	NM	Crown broken	
LC	6.3	7.9	Ring of enamel	2 hypoplastic lines
LPM1	5.1	8.8	Ring of enamel	
LPM2	5.8	8.4	Ring of enamel	
LM1	10.1	10.9	2/35-45	Hypercentosis
LM2	10.2	NM	3/35-45	
			Maxillary Dentition	
RM1	9.9	NM	3/35-45	Wear onto lingual root
RM2	10.2	NM	1/35-45	Wear onto lingual root
LM1	NM	NM	2/35-45	Penetration into pulp cavity

Mandible

The mandible was extremely fragmentary. The right ascending ramus and the coronoid process were preserved. The right mandibular corpus retained RM3, RM2, and RM1 *in situ*. Anterior to RM1 the mandible was in extremely poor condition, with the internal and external cortical layers of the mandibular corpus separating. A large mylohyoid groove was observed in the right corpus. The left half of the mandible was not preserved.

Mandibular Dentition

Fourteen mandibular teeth were recovered (Table 8.3). Only LI1 and LM3 were not recovered. Preservation of the mandibular teeth ranged from good to poor, all of them being extremely fragile. The following teeth are of special note.

RM3 Evinces classic helicoidal occlusal surface wear, but has been rotated in the alveolus (socket) post-mortem so that the plane of greatest attrition is distal. A small opening distal to RM3 and the position

98

of this tooth in the alveolus suggests that this tooth might have been hypererupted.

RM2 Occlusal surface attrition has lead to a complete loss of the enamel and dentine with exposure of the pulp cavity. Lack of evidence of an alveolar abscess and the rough edges of the occlusal penetration suggest that this invasion of the pulp cavity was post-mortem. Examination of the roots revealed a moderate development of hypercementosis. Inspection of the alveolus suggests that a moderate level of alveolar resorption is present. Both conditions indicate the presence of periodontal disease (periodontoclasia).

RM1 The occlusal surface is unusually lightly attrited in comparison with RM2 and RM3.

LC Two hypoplastic lines were observable on the lingual surface of the crown. The first hypoplastic line was 3.1 mm from the cemento-enamel junction, and the second was 2.2 mm from the cemento-enamel junction.

LM1 Examination of the roots of LM1 indicated a low degree of hypercementosis on the mesial root.

Maxillary Dentition

Three maxillary molars, all in extremely poor condition, were recovered (Table 8.3).

RM1 This tooth evinces extreme wear, to the point that the attrition has extended on to the lingual root. Deposition of secondary dentine has prevented any invasion of the pulp cavity.

RM2 This tooth also exhibits extreme wear like that seen in RM1. While attrition has extended onto the lingual root, there has been no invasion of the pulp cavity.

LM1 This tooth evinces the most extreme wear seen throughout the entire dentition. Tooth wear has extended onto the lingual root and the pulp cavity has been invaded. Examination of the roots reveals a localized development of hypercementosis in a bulb located in the periapical region of the lingual root.

II. Upper Limb

The upper limb was poorly preserved. None of the bones recovered, other than the right humerus, retained an articulatory end (Table 8.1). The right upper limb, although fragmentary, was in much better condition than the left. Like all of the bones recovered from this individual, the bones of the upper limb were extremely friable.

Right Humerus

The right humerus was the best preserved element of the upper limb. Proximally, the right humeral fragment was fractured just inferior to the disto-medial aspect of the humeral head. Laterally, the proximal humerus was fractured distal to the greater tubercle at the level of the surgical neck. The bicipital groove was well preserved and evinced a moderate degree of development. The point of insertion for pectoralis major was exceptionally well marked, while those of latissimus dorsi and teres major, just medial to that of pectoralis major, were poorly defined. The deltoid tuberosity was preserved and evinced a moderate to light degree of development. The radial groove, located just inferior and medial to the deltoid tuberosity was well preserved and was also moderately to lightly developed. The nutrient foramen was observable, located 46 mm distal to the inferior margin of the deltoid tuberosity on the medial aspect of the diaphysis. Distally, the right humeral fragment was fractured medially at a point on the diaphysis near the center of the origin of pronator teres, where the humeral diaphysis evinces a marked degree of medial flare. Laterally, the right humeral fragment is fractured at a point just superior to the disto-lateral extension of the origin for brachialis. Anteriorly, the distal right humerus preserved the superior one-third of the coronoid fossa, while on the posterior aspect the upper margin of the olecranon fossa is present.

Left Humerus

The left humerus was much less well-preserved than the right. All that remains is a portion of the distal one-third of the diaphysis. The posterior aspect of the left humeral diaphysis was better preserved than the anterior aspect. Anteriorly, the left humerus was fractured proximally just above the superior margin of the origin for the medial head of the triceps. Posteriorly, the left humerus was fractured proximally near the center of the origin for brachialis. Distally, the left humerus was fractured somewhat superior to the olecranon fossa on the posterior aspect. The exterior cortical bone of the left humerus was badly eroded and the nutrient foramen could not be located.

Right Ulna

One small fragment of the proximal portion of the right ulnar diaphysis was recovered. This fragment represents a small piece of the cortical bone from the proximo-medial aspect of the ulnar diaphysis. Proximally, this fragment was fractured at the distal border of the radial notch, near the distal aspect of the origin for flexor digitorum superficialis. Distally, the right ulnar diaphysis fragment was fractured just distal to the superior margin of the origin for flexor digitorum profundus. A small portion of the interosseous crest was preserved, but no other anatomical landmarks were observable.

Right Radius

Two poorly preserved fragments of the right radial diaphysis were recovered. The first fragment was a portion of the radial diaphysis just distal to the bicipital tuberosity. Proximally, this fragment was fractured approximately halfway down the anterior oblique line at the superior margin of the origin for flexor pollicis longus. The insertion for pronator teres on the lateral aspect of the radial diaphysis was well preserved, but was not well developed. Distally, this fragment of the radial diaphysis was fractured near the center of the origin for flexor pollicis longus on the lateral aspect. Medially, this portion of the radial diaphysis was poorly preserved due to erosion of the exterior cortex.

The second fragment of the right radial diaphysis represented a portion of the distal one-third of the shaft. Proximally, this fragment was fractured near the distal margin of the origin of flexor pollicis longus. Distally, this fragment was fractured just distal to the superior margin of the insertion for pronator quadratus. No important anatomical landmarks were observable on this portion of the radial diaphysis.

Right Clavicle

One moderately well preserved fragment of the right clavicle was recovered. Medially, the right clavicle was fractured near the point of minimum circumference approximately halfway down the clavicular diaphysis at the clavicular origin for the lateral one-third of the fibers for pectoralis major. Laterally, the right clavicle was fractured at the deltoid tuberosity, the point of insertion for the deltoid muscle. The anterior portion of the clavicular diaphysis was well preserved, while the posterior aspect of the clavicular diaphysis was completely destroyed.

III. Lower Limb

The lower limb was better preserved than the upper limb. All of the long bones of the lower limb were recovered (Tables 8.1 and 8.2). Like the upper limb, the articular ends were absent, leaving only the diaphyseal sections for analysis. None of the tarsal bones or pedal phalanges were preserved.

Right Femur

The right femur was the best preserved element of the lower limb and was represented by one large fragment. Proximally, this fragment of the right femoral diaphysis was fractured at the medial aspect of the femoral neck approximately one-third the length of the neck distal to the femoral head. Laterally, this fragment of the right femoral diaphysis was fractured proximally just inferior to the distal aspect of the greater trochanter at the lateral origin for vastus lateralis. The pectineal line was well marked and a portion of the lesser trochanter was preserved. The gluteal ridge was preserved on the medio-lateral aspect of the proximal diaphysis and evinced only moderate development. The trochanteric ridge was observable on the anterior aspect of the proximal femoral diaphysis and, like the pectineal line, evinced only moderate development. Two nutrient foramina were observed. The superior foramen was located just medial to the linea aspera, 67.5 mm distal from the most inferior aspect of the lesser trochanter. The inferior nutrient foramen was located just lateral to the linea aspera, 115 mm distal to the most inferior aspect of the lesser trochanter. Distally, the right femoral diaphysis fragment was fractured just superior to the point of divergence of the linea aspera into the medial and lateral supracondylar ridges.

Several measurements of the right femur were possible (Table 8.2). The antero-posterior diameter of the sub-trochanteric region was 22 mm. The medio-lateral diameter of the sub-trochanteric region was 29 mm. Calculation of the platymeric index yielded a value of 75.8. This value is very close to the results obtained by Brothwell (1963), who found that in a large sample of American Indians the platymeric index averaged 74. A value of 75.8 for the platymeric index is classified as platymeric (broad or flat) by Bass (1971).

Left Femur

The left femur was represented by a portion of the diaphysis which was fractured proximally at the inferior margin of the femoral neck on the medial aspect, but which was missing a large portion laterally. On the lateral aspect, the proximal left femoral diaphysis was fractured near the superior margin of the origin for vastus intermedius. The linea aspera was well preserved, but evinced only a moderate degree of development. Distally, the left femur was fractured at the point of divergence of the linea aspera into the medial and lateral supracondylar ridges. Because of extensive erosion of the external cortical surface, the nutrient foramen could not be located.

Right Tibia

One moderately well preserved fragment of the right tibial diaphysis was recovered. Proximally, the right tibial diaphysis was fractured at the popliteal line on the posterior aspect, but much of the anterior aspect has been lost. The nutrient foramen was present and well preserved. A small portion of the anterior tibial crest was preserved, but only for a length of 31 mm. Distally, the right tibial diaphysis was fractured laterally near the inferior margin of the origin for tibialis posterior. Medially, the right tibial diaphysis was heavily eroded.

Left Tibia

The left tibial diaphysis was somewhat better preserved than the right. Proximally, the left tibial diaphysis was fractured just superior to the popliteal line near the superior margin of the origin for the popliteal muscle. Anteriorly, much of the anterior tibial crest has been destroyed, but a section 90 mm in length is well preserved at midshaft. Distally, the left tibial diaphysis was fractured just superior to the fibular notch for the interosseous ligament.

Several measurements of the left tibia were possible (Table 8.2). The antero-posterior diameter of the tibial diaphysis at the level of the nutrient foramen was 29 mm. The medio-lateral diameter of the tibial diaphysis at the level of the nutrient foramen was 19 mm. Calculation of the platycnemic index yielded a value of 65.5, a value classified as mesocnemic by Bass (1971).

Right Fibula

Two small unidentifiable fragments of the right fibula were recovered. Identification was possible only because of the location of these fragments next to the lateral aspect of the right tibia. Although the cortical bone was heavily eroded and no anatomical landmarks could be observed, the overall configuration of these fragments strongly suggested that they were part of the fibula.

Left Fibula

Six small fragments of the left fibula were recovered. As with the right fibula, no anatomical landmarks were identified and identification was only possible from overall configuration and location next to the lateral aspect of the left tibia.

DETERMINATION OF SEX

The determination of sex of the individual interred as Feature 1 can be based upon both morphological and metrical criteria. Examination of the morphological features of the cranium and mandible all suggest femininity. The occipital region of the skull presented a small and very lightly developed transverse nuchal line. There was no development of the suprameatal crest over the external auditory meatus on either the right or the left temporal. Keen (1950) found that the development of the suprameatal crest was common in Cape Colored populations in South Africa and was an excellent indicator of maleness. The lack of this crest allowed him to predict femininity with a high degree of accuracy. The anterior portion of the mandible presented a "rounded" chin. Stewart (1979) and Brothwell (1981) both suggest that while a "squared off" chin is indicative of maleness, a rounded chin is strong evidence for femininity.

The post-cranial skeleton evinced a number of signs of gracility in muscle development. The deltoid tuberosity of the right humerus, the popliteal line of the left tibia, and the linea aspera in both the right and left femora were all of light to moderate development. Such gracility in muscle attachment areas of the post-cranial skeleton strongly argue for femininity, especially in prehistoric, preagricultural populations (Krogman 1961; Stewart 1979; Ubelaker 1978).

Only one metric observation was possible for the determination of sex in this individual due to the fragmentary nature of the remains. Measurement of the maximum antero-posterior diameter of the femoral diaphysis has been described as an excellent indicator of sex in fragmentary remains (MacLaughlin and Bruce 1985). Utilizing this method, the researchers were able to correctly identify sex with an accuracy rate of 90.6% in a population of 48 Scottish Short Cist individuals. Males, because of the greater development of the leg musculature and because of greater overall body size, tend to possess a femur that has a larger antero-posterior diameter. Females, because of their smaller overall body size and lesser development of total musculature, tend to have a femur which has a small antero-posterior diameter. In their population of 48 individuals, MacLaughlin and Bruce found that males tend to average 29.8 mm maximum antero-posterior femoral diameter, while females averaged 24.2 mm. Utilizing a sectioning point of 27.0 mm, with the males above this point and the females below, sex could be easily determined from the femur. Measurement of the maximum antero-posterior diameter of the right and left femur (Table 35) of the individual at the Narrows Site, yielded two measurements of 24.0 mm. Such a dimension clearly aligns this individual with the female portion of MacLauglin and Bruce's sample.

There was no evidence to suggest maleness in this individual. All indicators that were possible to observe suggested femininity. Therefore, it can be stated, with some hesitancy due to the highly fragmented nature of the remains, that the individual interred as Feature 1 at the Narrows Site was female.

AGE AT DEATH

The most frequently used method to determine the age at death of juvenile individuals is an examination of dental development and replacement of the deciduous teeth with the permanent dentition (Brothwell 1981). Examination of the dentition of this individual revealed that all of the permanent teeth, including the third molars (wisdom teeth), were fully developed and in place. This suggests a minimum age at death of at least 18 years (Bass 1971).

Age determination in young adults is most often done through an examination of the sequential closure of the epiphyseal lines in the various long bones. Closure of the epiphyseal lines indicates that the bone has reached full maturity and has stopped growing. Analysis of the sequential closure of the epiphyseal lines has had much success in correctly assigning age at death for individuals up to 30 years of age (McKern and Stewart 1957; Stewart 1979). Unfortunately, none of these areas was preserved in the Narrows Site burial and no observations could be made. Other methods, such as the metamorphosis of the pubic symphysis (McKern and Stewart 1957; Gilbert and McKern 1973) and ecto-cranial suture closure (Todd and Lyon 1924), which could be used in some individuals to assess age in middle-aged and older adults, could not be applied in this case due to the fragmentary nature of the remains.

Age at death can also be assessed with some degree of confidence by utilizing the level of dental attrition (tooth wear) in molar teeth. Success in determining age at death in prehistoric populations has been rather high when the standards and methodology of Brothwell (1981), Miles (1963), or Lovejoy (1985) have been employed. It is widely known that, due to the nature of the diet and the method of food preparation, tooth attrition is both very rapid and extensive in prehistoric American Indian populations (Bass 1971; Ubelaker 1978). Tooth wear was seen to be quite severe in this individual (Table 8.3). Use of the available eight molars suggests an age at death at some point between 35 and 45 years of age (except for the mandibular R1). Since five of the seven molars which scored in this age range scored two or less, this would strongly suggest that this individual died closer to 35 years than to 45 years. The lack of any ante-mortem tooth loss, the lack of any evidence for any degenerative changes (osteoarthritis) in the skeleton, and the overall heavy attrition levels in Oregon Indians relative to Brothwell's prehistoric sample all suggest that this individual most likely died at some point in the fourth decade of life (30 to 40 years), probably in the lower to central part of this range (32 to 37 years).

In summary, while the skeletal indicators of age at death are scanty due to the fragmentary nature of the remains, dental development and attrition strongly suggest an age at death at some point during the fourth decade of life, most likely between the ages of 32 to 37 years.

ESTIMATION OF STATURE

Usually stature is a relatively easy calculation from skeletal remains and can be performed with a high degree of accuracy. The best bones for the estimation of stature are the femur and tibia. However, due to their fragmentary nature these bones could not be used for stature estimation of the individual recovered at 35DO153, even when Steele's (1970) method for reconstructing stature from fragmentary long bones is employed. The only long bone sufficiently preserved to employ either Muller's (1935) or Steele's (1970) methods was the right humerus. Measurement of the distance from the convergence of two areas of muscle attachment just below the greater tubercle to the superior margin of the olecranon fossa (Muller's c-d) yielded a measurement of 202 mm, for a reconstructed overall length of the humerus of 290.1 mm (Muller 1935). Applying Trotter and Glesier's formula for stature reconstruction of mongoloids from the humerus (1958) yields an estimated stature of 160.93 cm (63.36") ± 4.25 cm (1.67"). Remeasurement of the fragmentary right humerus according the method of Steele (1970), which employs the distance from the most distal point on the circumference of the humeral head to the superior margin of the olecranon fossa (Steele's 2-3), yields a measurement of 238 mm. Employing Steele's formula for caucasian females (1970) yields a stature estimate of 158.2 cm (62.3") ± 5.4 cm (2.13").

Therefore, using the methods of Muller (1935) and Steele (1970) for reconstructing stature from the fragmentary remains of the humerus, the stature of the individual buried at the Narrows Site would be between 152.8 and 165.18 cm, most likely between 158.2 cm and 160.95 cm, or 62.3" to 63.36".

PATHOLOGICAL AFFLICTION

All of the long bones, cranial bones, and teeth of this individual were macroscopically examined for evidence of pathological affliction. None of the post-cranial bones yielded any evidence for disease, including signs of degenerative osteoarthritis, considered to be a part of the normal aging process (Stewart 1979; Brothwell 1981). The parietal bones were extremely thin supero-posteriorly (3 mm thick) and were thick anteriorly (11 mm thick). Such variable thickness of the parietals may be evidence of aging or may be indicative of some anemic condition (Angel 1966, 1967; Carlson et al. 1974; El-Najjar et al. 1976; Hengen 1971). However, such a diagnosis of anemia can only be pursued through the use of radiographs, which were unavailable for this analysis.

The dentition featured three indications of pathological affliction. RM2 and LM1 of the mandibular dentition, as well as LM1 of the maxillary dentition, all evinced some development of hypercementosis. This suggests that either there had been some infection of the pulp cavity, or that there had been some degree of chronic periodontoclasia (periodontal disease). The former explanation would seem best to explain the occurrence of hypercementosis in the maxillary LM1 where invasion of the pulp cavity was obvious. The latter explanation would best appear to explain the hypercementosis in the mandibular molars, especially RM2, where inspection of the alveolus of this tooth revealed a moderate level of alveolar resorption (another manifestation of periodontoclasia). A third indication of pathological affliction in the dentition is the presence of linear hypoplasia on the lingual surface of the enamel of the LC. Linear enamel hypoplasia is the result of an interruption of amelogenesis, or enamel deposition, during the formation of a tooth (Lukacs, Schultz, and Hemphill 1985). This hypoplastic effect can be caused by a number of factors including disease, insult or malnutrition. Measurement of the distance of these hypoplastic lines from the cemento-enamel junction of the LC suggests that these disturbances occurred between the ages of 4 and 5 (Brothwell 1981; Huss-Ashmore et al. 1982).

From the available evidence it appears that this individual suffered no obvious post-cranial pathologies at the time of death. Evidence from the cranium suggests a possibility of low-level chronic anemia, but such a diagnosis must remain tentative without the availability of radiographs. The dentition of this individual was good, although heavily attrited. One carious lesion in the maxillary LM1, hypercementosis in this tooth and the mandibular LM1 and RM1 was observed. A low level of alveolar resorption in mandibular RM1 and two hypoplastic lines in the enamel of LC were the extent of dental pathology. The cause of death could not be determined from the skeletal evidence available.

CHAPTER 9

CULTURAL COMPONENTS AT THE NARROWS SITE

An examination of the lithic artifact density, including debitage and tools, by level throughout the site suggests the presence of four cultural components. Except for Component I, these components are coterminous with the identified soil strata (cf. Figures 4.6, 4.8, 4.10, 4.11, 4.15, and 4.16). These graphs also show that the deepest and oldest component, Component IV, may not necessarily be present at the southern end of the tested area, i.e. units A through D. A series of eight radiocarbon assays dates these components, as noted above.

Table 9.1. Summary of artifacts from cultural components at the Narrows Site.

	Components				
	I	II	III	IV	Totals
Projectile Points	38	12	13	2	65*
Preforms	3	1			4
Formed Bifaces	11	14	14	1	40
Drills	1	1	2		4
Unformed Bifaces	17	8	7		32
Flake Unifaces	58	53	73	12	196
Spall Scrapers	8	2	4		14
Cores	16	6	17	5	44
Cobble Cores	7	4			11
Choppers	27	15	69	8	119
Hammerstones	3	7	14	2	26
Pounders	1	1	1		3
Edge Faceted Cobbles	2	2	1		5
Anvils	4		1		5
Stone Bowl Mortars		3	2		5
Hopper Mortars		1			1
Pestles	1	2	2		5
Abraders			1		1
Worked Bone	13		2		15
Baked Clay	1				1

* one projectile point was found in backdirt and was unable to be assigned to a component.

Table 9.2. Summary of projectile points based upon components identified at the Narrows Site.

	Components				
	I	II	III	IV	Totals
G-1	9		1		10
G-2	5	1	1		7
G-Frags.	4		1		5
NN	1		1		1
SN-1	4	1			5
SN-2	2	1	3		6
SN-3		1			1
SN-Frags.		1			1
CN			2		2
BS-1		1	3		4
BS-2				1	1
F-1	1	1			2
F-2				1	1
V-1	1				1
V-2	1				1
Fragments	10	4	2		16
	38	11	14	2	65

Key: G-1, Gunther Barbed; G-2, Gunther Stemmed; G-Frags., specimens too fragmentary to assign to either G-1 or G-2; NN, Narrow-necked; SN-1, small side-notched; SN-2, broad-necked side-notched; SN-3, large side-notched specimen; CN, corner-notched; BS-1, parallel broad-stemmed; BS-2, asymmetrical broad-stemmed; F-1, thick foliate-shaped; F-2, thin foliate with convex base; V-1, bipointed; V-2, asymmetrical shoulders.

COMPONENT I

Component I, with a series of four radiocarbon dates ranging from 90 ± 70 BP to 330 ± 80 BP, is found in the upper two soil strata of the north block excavation--units E through H. The loose, charcoal-laden silt in this circumscribed area, coupled with fire-cracked rock, faunal remains and a high density of artifacts, strongly suggest that this area was used as a midden.

The artifact assemblage of Component I includes chipped stone tools, bone tools, and a baked clay figurine fragment. The projectile points recovered from Component I are dominated by barbed and tanged varieties and small side-notched specimens. Among the formed bifaces collected were semi-lunate specimens and a Mule Ear knife. The lithic debitage from this component is evenly distributed between CCS and basalt, with obsidian represented in small

Table 9.3. Summary of formed bifaces by component.

	Component				
	I	II	III	IV	Totals
Semi-lunate	2	3	4		9
Mule Ear	1				1
Triangular			1		1
Scraper	2		2		4
Spatulate			1		1
Pyramidal		2	1		3
Crescentic	1				1
Fragments	5	9	5	1	20

proportions. Faunal remains include specimens of deer, salmon, and a large number of undetermined large mammal, which are probably deer.

A human burial, found to represent the flexed remains of a 32 to 37 year old woman in a prepared burial pit, was discovered in Component I.

This component represents a Late Archaic occupation of the site. The wide variety of artifacts suggests that the site may have been used as a base camp to which fishing, hunting, and gathering parties returned. Processing of fish, animals and collected vegetal resources, as well as the manufacture and repair of tools would have been the activities undertaken at the site. Obsidian waste flakes and finished tools indicate trade with neighboring people who had access to this material.

COMPONENT II

Component II lies within the medium brown Stratum II silt of units A through D, to the south of the north block excavation. Two radiocarbon assays date this component. A date of 450 ± 70 BP is associated with two stone bowl mortar fragments and an accompanying pestle fragment. A date of 1020 ± 60 BP is associated with the cobbles and artifacts found on the floor of the edge of a housepit that had been excavated into the lighter colored Stratum III clayey silt.

The artifact assemblage of Component II contains an assortment of chipped and ground stone tools. Among the latter are stone bowl and hopper mortar fragments and pestles. The projectile points of this component include a Gunther Tanged specimen, a leaf-shaped point, and a variety of broad-necked points. The lithic debitage is dominated by CCS waste flakes (69.1%),

Table 9.4. Summary of debitage material type by component.

	Components				
	I	II	III	IV	Totals
Obsidian	118 (4.6)	279 (9.4)	333 (10.7)	36 (10.0)	766 (8.5)
CCS	1327 (52.7)	2032 (69.1)	2033 (65.6)	201 (55.9)	5593 (62.7)
Basalt	1073 (42.6)	627 (21.3)	732 (23.6)	122 (33.9)	2554 (28.6)
	2518	2938	3098	359	8913

n / (%)

followed by basalt (21.3) and obsidian (9.4%). Faunal remains include specimens of deer and undetermined large mammal.

The stratigraphy, radiocarbon dates, feature, and artifact assemblage indicate a Middle to Late Archaic occupation. During this time the site appears to have been a base camp for fishing, hunting and gathering activities. Tool manufacture and repair also took place. The house pit suggests a more permanent occupation than might be suspected at a seasonal, and only temporarily occupied, fishing camp (cf. Drucker 1937:224). The processing of vegetal resources was apparently an important task performed at the Narrows Site during this period.

COMPONENT III

Component III lies within the reddish-brown clayey silt of Stratum III which is found throughout the site. A radiocarbon date of 5090± 80 BP was returned on charcoal collected from a small, bisque rimmed fire pit.

The artifact assemblage of this component is, as with Components I and II, a varied one. It includes chipped and ground stone tools as well as two fragments of worked bone. Cobble tools are common in this component, with a large number of choppers and hammerstones. Fragments of two stone bowl mortars and two pestles were recovered. The lithic debitage of this component is dominated by CCS (65.6%), with basalt (23.6%) and obsidian (10.7%) contributing lesser amounts.

Table 9.5. Summary of flake types by material and component.

	Components				
	I	II	III	IV	Totals
			Obsidian		
Primary	2	3	5	0	10
	(1.6)	(1.0)	(1.5)		(1.3)
Secondary	5	10	8	3	26
	(4.2)	(3.5)	(2.4)	(8.3)	(3.3)
Interior	108	259	307	32	706
	(91.5)	(92.8)	(92.1)	(88.8)	(92.1)
Debris	3	7	13	1	24
	(2.5)	(2.5)	(3.9)	(2.7)	(3.1)
	118	279	333	36	766
			CCS		
Primary	10	20	9	1	40
	(0.7)	(0.9)	(0.4)	(0.4)	(0.7)
Secondary	31	60	9	1	101
	(2.3)	(2.9)	(0.4)	(0.4)	(1.8)
Interior	934	1416	1499	133	3982
	(70.3)	(69.6)	(73.7)	(66.1)	(71.1)
Debris	352	536	516	66	1470
	(26.5)	(26.3)	(25.3)	(32.8)	(26.2)
	1327	2032	2033	201	5593
			Basalt		
Primary	95	58	45	5	203
	(8.8)	(9.2)	(6.1)	(4.0)	(7.9)
Secondary	381	229	220	37	867
	(35.5)	(36.5)	(30.0)	(30.3)	(33.9)
Interior	488	267	408	70	1233
	(45.4)	(42.5)	(55.7)	(57.3)	(48.2)
Debris	109	73	59	10	251
	(10.1)	(11.6)	(8.0)	(8.1)	(9.8)
	1073	627	732	122	2554

Table 9.6. Flake completeness summary by component.

	Components				
	I	II	III	IV	Totals
			Obsidian		
Platform +	57	146	168	25	396
	(48.3)	(52.3)	(50.4)	(69.4)	(51.6)
Platform -	58	126	152	10	346
	(49.1)	(45.1)	(45.6)	(27.7)	(45.1)
Debris	3	7	13	1	24
	(2.5)	(2.5)	(3.9)	(2.7)	(3.1)
	118	279	333	36	766
			CCS		
Platform +	283	438	524	47	1292
	(21.3)	(21.5)	(25.7)	(23.3)	(23.1)
Platform -	692	1058	993	88	2831
	(52.1)	(52.0)	(48.8)	(43.7)	(50.6)
Debris	352	536	516	66	1470
	(26.5)	(26.3)	(25.3)	(32.8)	(26.2)
	1327	2032	2033	201	5593
			Basalt		
Platform +	315	218	247	34	814
	(29.3)	(34.7)	(33.7)	(27.8)	(31.8)
Platform -	649	336	426	78	1489
	(60.4)	(53.5)	(58.1)	(63.9)	(58.3)
Debris	109	73	59	10	251
	(10.1)	(11.6)	(8.0)	(8.1)	(9.8)
	1073	627	732	122	2554

n / (%)

Table 9.7. **Summary of flake sizes by component.**

	Component I	II	III	IV	Totals
			Obsidian		
1	80 (67.7)	206 (73.8)	228 (68.4)	25 (69.4)	539 (70.3)
2	38 (32.2)	72 (25.8)	101 (30.3)	11 (30.5)	222 (28.9)
3		1 (0.3)	4 (1.2)		5 (0.6)
	118	279	333	36	766
			CCS		
1	466 (35.1)	957 (47.0)	923 (45.4)	70 (34.8)	2416 (43.1)
2	753 (56.7)	934 (45.9)	956 (47.0)	112 (55.7)	2755 (49.2)
3	96 (7.2)	118 (5.8)	125 (6.1)	17 (8.4)	356 (6.3)
4	11 (0.8)	21 (1.0)	23 (1.1)	2 (0.9)	57 (1.0)
5	1 (<.1)	2 (<.1)	6 (0.2)		9 (0.1)
	1327	2032	2033	201	5593
			Basalt		
1	117 (10.9)	100 (15.9)	102 (13.9)	14 (11.4)	333 (13.0)
2	455 (42.4)	238 (37.9)	325 (44.3)	42 (34.4)	1060 (41.5)
3	246 (22.9)	124 (19.7)	136 (18.5)	28 (22.9)	534 (20.9)
4	129 (12.0)	78 (12.4)	72 (9.8)	25 (20.4)	304 (11.9)
5	62 (5.7)	45 (7.1)	45 (6.1)	9 (7.3)	161 (6.3)
>5	64 (5.9)	42 (6.6)	52 (7.1)	4 (3.2)	162 (6.3)
	1073	627	732	122	2554

n / (%)

The majority of the classifiable projectile points recovered from Component III are broad-stemmed specimens, including both corner- and side-notch varieties. Also recovered were two Gunther series points and one narrow-necked specimen, found below Component I in the north block area and considered to be intrusive.

The stratigraphic position of Component III, coupled with the radiocarbon date and associated artifacts, indicates a Middle Archaic occupation. Activities at the site during this period, as indicated by the artifact assemblage, suggests that the site was used as a base camp to which people brought fish, animals and vegetal resources for processing. Tool repair and manufacture were performed by the occupants. There are no cultural features, such as house pits, to indicate that the site was used other than on a seasonal basis.

COMPONENT IV

Component IV is represented by the artifacts, debitage, and feature uncovered in the north block area at a depth of approximately 110 to 150 cm below the surface in Stratum IV. An amorphous area of grey sand within which were observed small pieces of calcined bone and charcoal was determined to be a fire pit. Charcoal collected from this area returned a date of 6270 ± 130 BP. With 30 tools and 359 pieces of lithic debitage, Component IV is the least well represented of the components at the Narrows Site.

Included in the artifact assemblage of Component IV are choppers, a hammerstone, utilized flakes, an endscraper, and a biface fragment. Lithic debitage, dominated by CCS (55.9%), also includes basalt (33.9%) and obsidian (10.0%).

The two projectile points recovered include an asymmetrical broad-stemmed specimen and a convex base foliate specimen.

The limited artifact variety of this Middle Archaic occupational episode at the Narrows Site indicates that the site, during this period, may have served as a short term seasonal camp (cf. Jones, Grayson and Beck 1983 regarding sample size and artifact variety). The activities suggested by the artifact assemblage include tool manufacture and repair, as well as hunting. The small fragments of calcined bone found in the fire pit indicate that game was returned to the camp for processing.

As may be seen in Tables 9.4 through 9.7, the debitage recovered from each of the four components at the Narrows Site appears to be very similar in terms of a) relative proportions of raw material, b) reduction stage, c) completeness of flakes, and d) flake size. That obsidian continues to be used in a conservative manner from the earliest to the most recent period of occupation is strongly suggestive of a non-local source. Recent obsidian sourcing of specimens collected from archaeological sites in the North Umpqua drainage indicates that obsidian from distant sources may have found its way into the basin. The samples from these sites have shown the most similarity with sources in the Newberry Crater region of western Fort Rock Basin and the Silver Lake/Sycan Marsh region of south central Oregon (S. Berryman 1987; J. Berryman 1987).

CHAPTER 10

SUMMARY OF THE NARROWS SITE TESTING

Testing at the Narrows Site during 1986 and 1987 was prompted by continued vandalism to this potentially significant archaeological resource located in the Umpqua Basin on land administered by the Bureau of Land Management. Approximately 22.6 m^3 were excavated with the recovery of 597 tools and 8913 pieces of lithic debitage. Among the artifacts were a variety of chipped and ground stone tools, worked bone, and a fragment of a baked clay figurine. Cultural features were identified. These included an edge of a house pit, two fire pits, a site-wide cobble lens, and a human burial. An examination of the vertical distribution of cultural material found at the site strongly suggests the presence of four stratigraphically separable cultural components. Nine radiocarbon assays on charcoal associated with features and artifacts help date each of these components.

The Narrows Site is situated on a narrow terrace overlooking a constricted chute through which the North Umpqua River rushes. It is currently a popular fishing spot from which many anadromous fish are caught during their run upstream to spawn. In 1855, when the original cadastral survey of this region of the North Umpqua River was conducted, the Narrows was being used by the Indians as a fishery (Flint 1855:4375).

The ethnohistoric information regarding the aboriginal occupants of the Umpqua Basin suggests a subsistence/settlement pattern that was as dependent upon anadromous fish as other groups farther to the south. In these interior valleys through which coastal streams flow, large numbers of fish were caught in weirs and traps constructed by the Indians. Fish were also taken by spear, dip net, and angling. The presence of net weights in archaeological deposits at the Umpqua/Eden and Sylmon Valley School sites indicate that large nets were also used in the basin (Ross and Snyder 1986; Lyman 1985). In the Umpqua Basin, as in the valleys to the south, the method of harvesting this bountiful resource depended upon the micro-environmental situation. While the cadastral records remain mute regarding the fishing equipment employed by the Indians at the Narrows fishery, it may be conjectured that the gear included spears and dip nets. In the immediate vicinity of the natural chute the river is much too deep and the current too powerful to have allowed the construction of a weir. A short distance upstream, however, the river is sufficiently shallow for this to have been practicable.

The debitage and tool assemblages (Figure 10.1) of each component are remarkably similar, perhaps indicating similar activities throughout the occupation of this site. As may be expected, however, the types of projectile points found associated with the components change over time (Table 9.2).

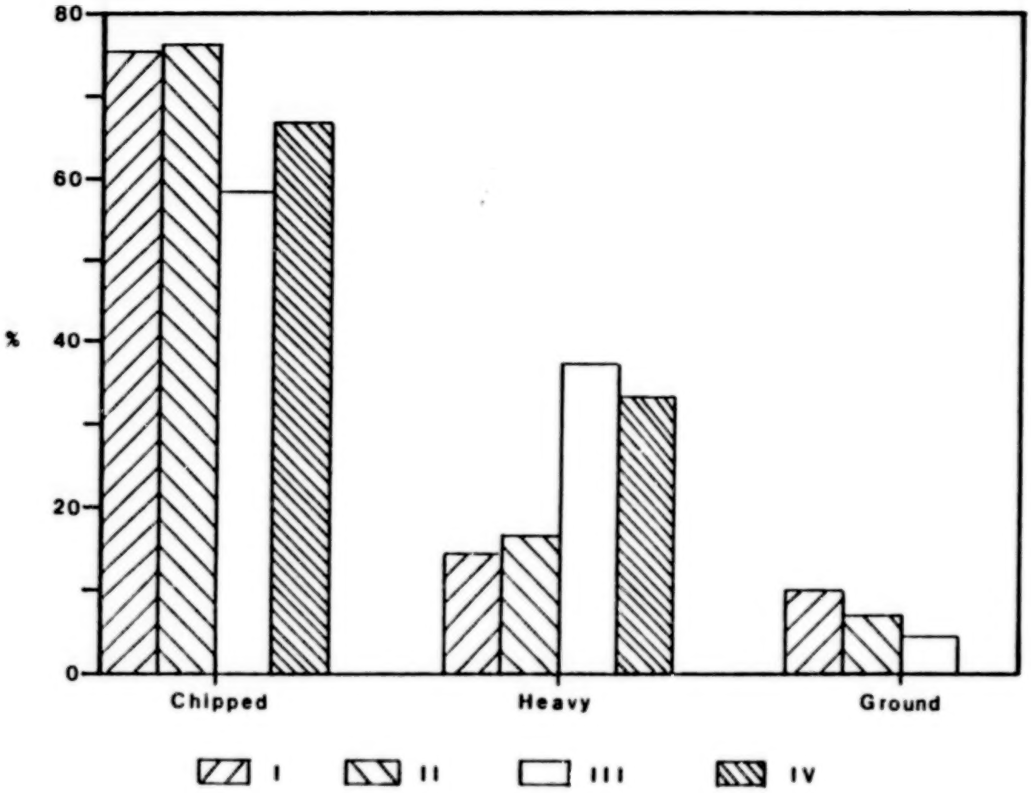

Figure 10.1. Relative proportions of chipped, heavy, and ground stone tools in each of the four Narrows Site components.

The artifact assemblage at the Narrows Site does not appear to be specialized. While barbed projectile points similar to the type commonly found in Component I have been thought to be associated with fishing (Cressman 1960), this has yet to be proven (cf. Leonhardy 1967). At the Narrows Site projectile points, knives, drills, and endscrapers are found with mortars, pestles, and edge-faceted cobbles. Hunting and/or fishing and the processing of vegetal resources are suggested. The house pit of Component II is consistent with the ethnographic record wherein a small group may split from the main body of the patrilineal band to permanently occupy a special use site to which they have rights. The setting and recovered artifacts point toward the use of the Narrows Site as a base camp from which hunting, fishing, and gathering activities were pursued and which may have been, at times, permanently occupied. The cadastral survey records note the presence of a larger village on the opposite side of the river from the Narrows archaeological site. The occupants of the Narrows Site were undoubtedly affiliated with this village, which has yet to be located.

The literature for southwest Oregon and northwest California includes a number of examples of archaeological sites containing multiple burials (cf. Cressman 1933; Berreman 1944; Heizer and Elsasser 1964; Heflin 1966). Isolated human burials have been encountered in the Umpqua Basin during roadway and house construction (Hanes 1978a, 1978b). They have also been reported eroding from river and creek banks, not uncommonly associated with other archaeological materials (Henbest 1984). The human burial at the Narrows Site, removed only after consultation with representatives of the Siletz Indians' Sacred Lands Committee and the Cow Creek Band of Umpqua Tribe of Indians, is one of only four that have been professionally excavated in the Umpqua Basin (Minor 1983; Tasa 1987; O'Neill 1987). The disposition of the remains at the Narrows Site appears to have been similar to that observed at site 35DO393, a Late Archaic burial in the middle Umpqua Basin. In both instances the remains represent tightly flexed burials placed in basin-shaped burial pits. The human remains at site 35DO393, representing those of a 20 to 25 year old male, were radiocarbon-dated to approximately 500 years ago and were accompanied by a ground slate club that had been broken in half prior to burial (O'Neill 1987).

Though radiometrically dated sites and assemblages are not common in the Umpqua Basin, concerted efforts in recent years have returned radiocarbon dates from archaeologically tested sites in the lower, middle, and upper basins (Table 3.2). In part, these efforts have helped to begin a process whereby the culture history of the basin may be independently reconstructed (O'Neill 1989c), rather than depending entirely upon an appeal to a comparison of morphologically similar artifacts from dated sites beyond the Umpqua Basin (c.f. Lyman 1985). In this respect the four components identified at the Narrows Site may be compared to other radiocarbon dated Umpqua Basin assemblages.

A comparison of the cultural components identified at the Narrows Site with other excavated Umpqua Basin components is presented in Part IV of this report.

PART III

THE MARTIN CREEK SITE (35DO147):

TWO LATE ARCHAIC ROCKSHELTERS

CHAPTER 11

MARTIN CREEK SITE SETTING

The Martin Creek Site is located approximately 120 m downstream from the confluence of Martin Creek and the Umpqua River at an elevation of 48 m above sea level on land administered by the Bureau of Land Management (Figure 11.1). At this point the river flows meanderingly through steep canyons cut in the Coast Range Mountains and is bordered by narrow terraces. Opposite the site, on the west bank of the river, is a series of terraces that rise upward and westward away from the river. On the east bank of the Umpqua River is a narrow terrace which is abutted by exposed sandstone outcrops. It is within these outcrops that the rockshelters comprising the Martin Creek Site are found.

In this portion of the Coast Range, the middle Eocene age (ca. 45 million years) Tyee Formation is the most dominant geological feature. Exposed in the valley formed by the Umpqua River between Tyee Mountain and Elkton, the Tyee Formation is composed of "rhythmically bedded, micaceous sandstone beds grading upward into siltstone" where sharp breaks separate each graded bed (Baldwin 1981:27).

The vegetation in the vicinity of the Martin Creek Site has been inventoried (Table 11.1) and is found to be consistent with the area's inclusion in the Interior Valley Zone (Franklin and Dyrness 1973:110-126). Slopes in the vicinity of the Martin Creek Site are covered with conifers.

The soils at the Martin Creek Site have been identified as belonging to the Newberg Series which are classified as Fluventic Haploxerolls. In general, soils of the Newberg Series are deep, well drained soils that formed in sandy alluvium derived from sedimentary and basic igneous rocks. They are found on flood plains with slopes of 0-3 percent and are medium acidic, with pH readings of 5.8 to 6.0. Native vegetation associated with these soils include Oregon ash, Oregon white oak, Douglas fir, willows, wild roses, blackberry, annual grasses, and weeds (USDA 1981).

The archaeological materials at the Martin Creek Site (35DO147) are found in two rockshelters at the base of a sandstone outcrop which is generally aligned in a northwest-southeast direction. These are referred to as "Upper Shelter", which rests upon a slightly raised terrace of colluvium, and "Lower Shelter", which was filled to the drip line with alluvium and colluvium (Figure 11.2). A sandy terrace approximately 30 meters wide separates the outcrop from the Umpqua River, which lies to the west. Between the outcrop and the river is an abandoned logging road overgrown with Scotch broom and blackberry vines. On the terrace is a mixed stand of mature trees (Table 11.1). One Douglas fir growing at the base of the outcrop and adjacent

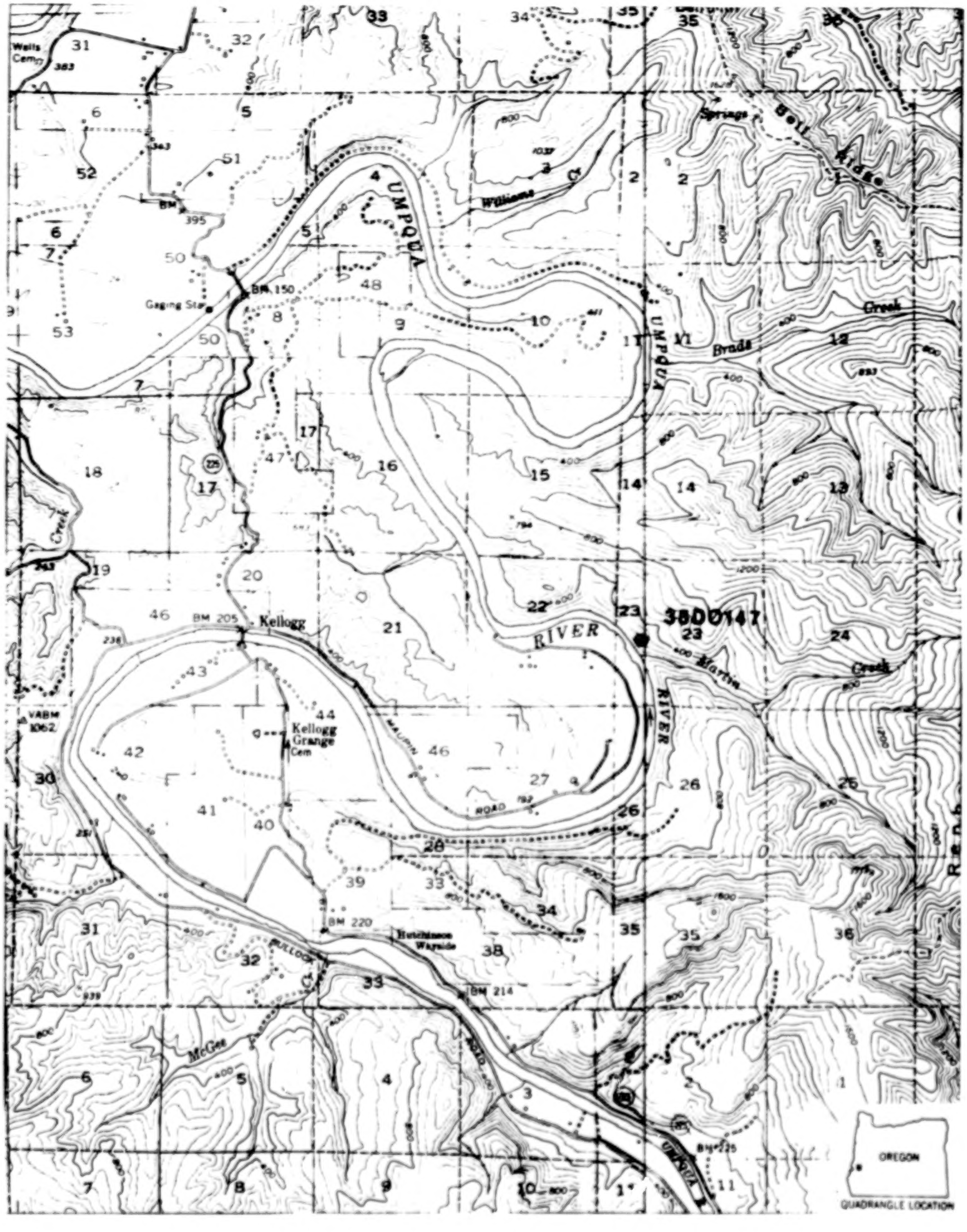

Figure 11.1. Location of the Martin Creek Site (35DO147) in Douglas County, Oregon (USGS Drain and Elkton 15' quadrangles, 1954 and 1955).

Table 11.1. List of plants in the vicinity of the Martin Creek Site (Holmes 1986b).

Trees

Acer circinatum	Vine maple	*Populus trichocarpa*	Black cottonwood
Acer macrophyllum	Big-leaf maple	*Pseudotsuga menziesii*	Douglas fir
Chamaecyparis lawsoniana	Port Orford cedar	*Quercus kelloggii*	Kellogg's oak
Fraxinus latifolia	Oregon ash	*Umbellularia californica*	California laurel

Shrubs

Corylus cornuta	Hazelnut	*Rubus discolor*	Himalayan blackberry
Cytisus scoparius	Scotch broom		
Rhus diversiloba	Poison oak	*Salix* sp.	Willow

Grasses and Forbs

Artemisia douglasiana	Douglas's sagebrush	*Osmorhiza chilensis*	Mountain sweet-root
Bromus carinatus	California brome-grass	*Oxalis suksdorfii*	Western yellow oxalis
Cardamine pulcherrima	Slender toothwort	*Parentucellia viscossa*	Yellow Parentucellia
Carex obnupta	Sough sedge	*Phalaris arundinacea*	Reed canary grass
Chrysanthemum leucanthemum	Oxeye-daisy	*Plantago lanceolata*	Buckhorn plantain
Cynosurus echinatus	Crested dog's tail grass	*Polygonum* sp. (aquatic)	Knotweed
Dactylis glomerata	Orchard grass	*Polystichum munitum*	Common sword-fern
Dryopteris arguta	Coastal shield-fern	*Prunella vulgaris*	Self-heal
Equisetum arvense	Common horsetail	*Pteridium aquilinum*	Bracken fern
Equisetum hyemale	Common scouring-rush	*Rumex acetosella*	Field sorrel
Equisetum telmateia	Giant horsetail	*Satureja douglasii*	Yerba buena
Festuca arundinacea	Tall fescue	*Senecio jacobaea*	Tansy ragwort
Fragaria vesca	Woods strawberry	*Smilacina stellata*	Starry false Solomon's seal
Galium aparine	Goose-grass		
Geranium sp.	Geranium	*Synthyris reniformis*	Snow queen
Juncus effusus	Common rush	*Tellima grandiflora*	Fringecup
Linum angustifolium	Narrow-leafed flax	*Trientalis latifolia*	Western starflower
Lonicera hispidula	California honeysuckle	*Trifolium dubium*	Least hop clover
Lotus corniculatus	Birdsfoot-trefoil	*Trifolium repens*	White clover
Madia madioides	Woodland tarweed	*Trillium ovatum*	Western trillium
Melilotus alba	White sweet-clover	*Urtica dioica*	Stinging nettle
Montia sibirica	Siberian montia	*Vicia hirsuta*	Tiny vetch
Myosotis discolor	Yellow and blue forget-me-not		
Nemophila pedunculata	Meadow nemophila		

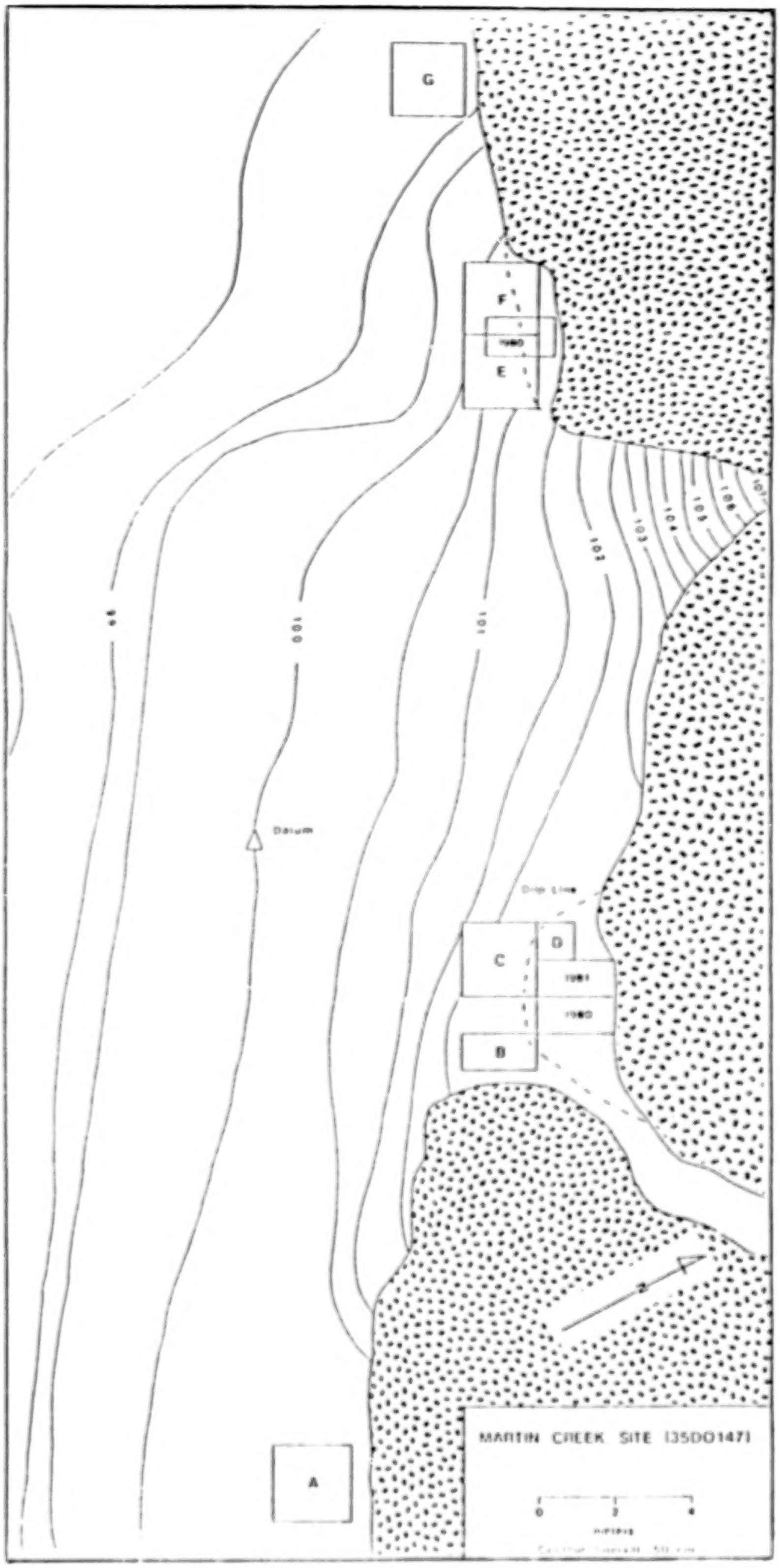

Figure 11.2 Map of test excavations at the Upper and Lower shelters at the Martin Creek Site.

to Lower Shelter has a diameter of 18 feet and is estimated to be between 300 to 500 years old.

Test excavations at the Martin Creek Site were conducted in 1980, 1981, and 1986. The original work was undertaken to a) sample an undisturbed rockshelter, the surface of which contained evidence of prehistoric occupation --Upper Shelter, and b) investigate the possibility that cultural material may be found at the base of the sandstone outcrop where a buried rockshelter was suspected--Lower Shelter. The September 1980 investigations were directed by David Corliss, former Roseburg District BLM archaeologist (Corliss 1981b). Vandalism to Upper Shelter prompted a return to the site in October 1981 (Corliss 1981b).

Roseburg District BLM archaeologist Isaac Barner noted that vandalism continued at the Martin Creek Site with both shelters showing evidence of unsanctioned digging. In November 1985 Barner excavated a series of seven auger probes at the base of the sandstone outcrop in order to determine the horizontal and vertical extent of the cultural material. These test probes were inconclusive due to the small size of the soil auger and the large size of the roots and colluvium found on the terrace.

Figure 11.3. Upper Shelter at the Martin Creek Site.

The 1986 test excavations, performed between 22 July and 14 August, were conducted through the combined efforts of a field crew drawn from the BLM, Umpqua Community College archaeological field school, and Rogue Valley Archaeological Society. Attendance by the BLM participants was interrupted due to their other duties and the severe fires of that summer; the UCC students suffered illness, poison oak, and insect stings.

During the 1986 investigations 23 m^2 were excavated in seven test pits, labeled A through G (Figure 11.2). Seven m^2 were excavated in and around Upper Shelter (TPs B, C, and D) and eight m^2 were excavated at Lower Shelter (TPs E and F). One 2x2 meter unit, TP-G, was placed at the west end of the site in order to assess the possibility that the cultural material of Lower Shelter continued in that direction. The fill of TP-G was sample screened to a depth of 225 cm below the surface without recovering any cultural material or encountering bedrock. An auger probe was then excavated to a depth of 320 cm below the surface where it was terminated upon encountering sandstone. One piece of basalt debitage was collected in the auger probe at a depth of approximately 310 cm below the surface. TP-A, also a 2x2 meter unit, was placed at the east end of the site at the base of the sandstone outcrop. Although the lack of time precluded attaining much depth in this test pit, seven pieces of debitage (6 CCS, 1 basalt) were recovered from three 10 cm levels of a single 1x1 meter quad.

The narrow-necked, barbed and tanged projectile points recovered from Upper Shelter are consistent with the recent radiocarbon dates obtained from the cultural deposits of this rockshelter. The lanceolate and foliate-shaped specimens recovered from Lower Shelter suggest an earlier occupation.

Presented below is a narrative of the excavation and an analysis of the artifacts recovered from each rockshelter. The three components identified at Upper Shelter are also described. Full use is made of the artifacts, field notes, and "Stratigraphic Evaluation" prepared by Corliss of the Martin Creek Site (1981b).

CHAPTER 12

UPPER SHELTER INVESTIGATIONS

Upper Shelter is approximately two meters from front to rear and four meters wide. It is fronted by a talus of rooffall, colluvium and an accumulation of cultural debris (Figure 11.3). Boulder-sized pieces of sandstone rooffall are evident within the shelter as well as in front of it. In addition to the rooffall, colluvium has been channelled into the shelter by a gap in the outcrop. This gap runs diagonally through the outcrop in an east-west direction. The slope wash that has descended this natural chute has helped to seal the cultural deposits.

1980 AND 1981 INVESTIGATIONS

Upper Shelter was first tested in 1980 by means of a 1x2 meter test pit placed within the shelter (Figure 11.2). This unit, labeled TP-2, was excavated to a depth of 50 cm below the surface where it was terminated upon reaching fragmented bedrock. Corliss (1981b) identified four "layers" that were distinguishable one from the other on the basis of soil color and texture, and associated cultural material (Figure 12.1).

Layer 1 consisted of "surface duff, rooffall, and sandy alluvium" and contained no cultural material.

Layer 2, a "light brown sandy silt", contained "numerous bone fragments and one large pestle." Corliss identified these bones as those of a deer and postulated that their fragmented condition may have been the result of marrow extraction or the manufacture of bone tools. Corliss further observed that, "The cultural debris in Layer 2 could have been the work of a single person and the deposit itself could have been laid down in a single episode of flooding." No diagnostic artifacts or datable carbon were observed.

Layer 3, the most productive of the layers, was a dark sandy loam containing "charcoal, bone, and ash deposits." The artifacts recovered included six small, tanged projectile points, cobble tools, and CCS debitage. Among the faunal remains collected from this layer were bones identified as deer, elk, fish, rabbit, and an "unidentified carnivore". The shell of river mussel was collected as was "one ocean clam shell." Land snail shell was also collected. Botanical remains in the form of carbonized nut shells were also recovered from Layer 3. A charcoal sample collected from this layer and sent for assay following the 1986 test excavations returned a date of 400 ± 70 BP (Beta 17812).

Layer 4 was described as a dark brown, fine sandy loam which "produced much less charcoal and fewer cryptocrystalline chips and bone fragments."

Because Upper Shelter continued to be the focus of pothunter attention, Corliss returned to the site in 1981 in order to secure "a better sample of the site in the event that digging continued and the site was destroyed." The test pit excavated in Upper Shelter was widened by two meters (Figure 11.2). The excavation of this 1x2 meter test pit was terminated at the interface of (1980) Layers 3 and 4. The excavation layers were redefined by Corliss for the 1981 excavation:

1980	1981
Layer 1 and 2	Layer 1
Layer 3	Layer 2a
Layer 4	Layer 2b

Layer 1 was a light brown sandy silt of "flood or eolian" origin. Its thickness would have been approximately 27 cm. Though Corliss observed several pieces of scapula, no artifacts or lithic debitage were recovered from the screening of this layer.

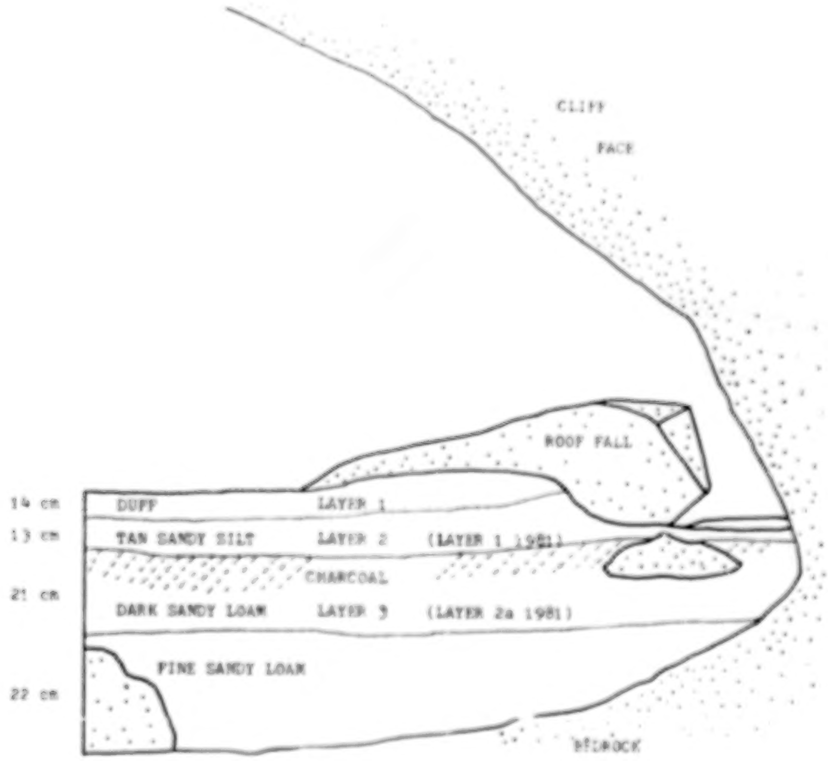

Figure 12.1. Corliss' 1980 and 1981 stratigraphic layers.

Layer 2a, approximately 21 cm thick and described as "black/grey midden", yielded bone fragments, CCS flakes, and formed tools. Among the latter were four barbed and tanged projectile points, an endscraper, and "numerous cobble tools." Of the bone collected, Corliss remarks, "Since a large sample of bone fragments was recovered from this pit in the previous excavation only diagnostic bone ... was saved." Unfortunately, much of this was lost.

STRATIGRAPHY

The results of the 1980-81 test excavations provided a guide for the 1986 excavations. Although distinguishing each of the strata is made difficult by the presence of large amounts of cobble and boulder-sized pieces of rooffall, the 1986 test excavations at Upper Shelter corroborated Corliss' stratigraphic assessment and identified a fifth, deeper unit which Corliss' probes had not reached (Figure 12.2). The first two strata were discontinuous where previous test excavations and pothunters' activities had removed them.

Stratum I, found between 0-12 cm below the surface, is a light brown humic silt containing small roots. This stratum corresponds to Corliss' 1980 Layer 1.

Stratum II, between 5-20 cm below the surface, is a tan sandy silt corresponding to Corliss' 1980 Layer 2. Stratum I and this stratum were combined in Corliss' 1981 Layer 1.

Stratum III, found 10-35 cm below the surface, is a dark brown sandy silt. Cobble-sized pieces of colluvium are common. This stratum corresponds to Corliss' 1980 Layer 3 and his 1981 Layer 2a.

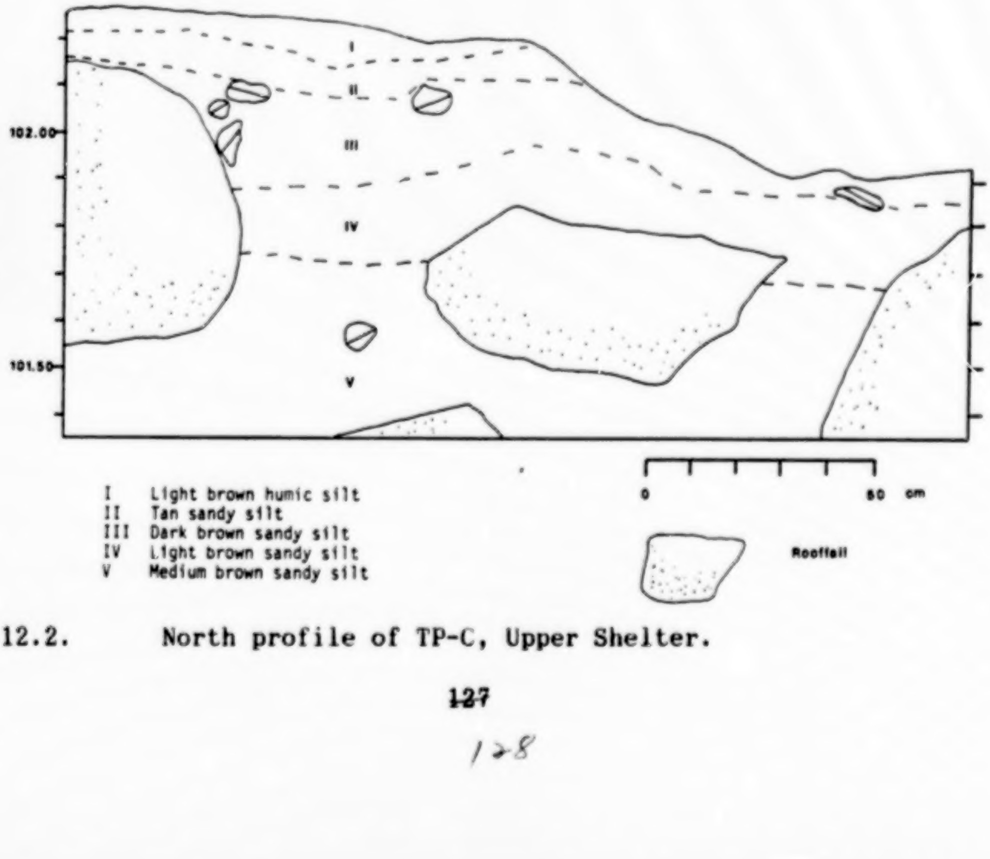

Figure 12.2. North profile of TP-C, Upper Shelter.

Figure 12.3 Work in progress at Upper Shelter.

Stratum IV, from 35-50 cm below the surface, is a light brown sandy silt which corresponds to Corliss' 1980 Layer 4 and his 1981 Layer 2b.

Stratum V, from 50 to at least 90 cm below the surface, is a medium brown sandy silt within which are large boulders of rooffall.

The test excavations at Upper Shelter encountered much boulder-sized sandstone rooffall which impeded continued excavation. It should be noted that bedrock--either siltstone or sandstone--was not reached.

1986 EXCAVATIONS

The 1986 investigations of Upper Shelter included excavation of 7 m^2 adjacent to Corliss' 1980 and 1981 probes (Figure 12.3). These excavations consisted of one 1x2 meter pit (TP-B), one 2x2 meter pit (TP-C), and one 1x1 meter unit (TP-D). The two larger units were divided into 1x1 meter "quads." Quad A is the northwest 1x1, Quad B the northeast, Quad C the southwest, and Quad D the southeast 1x1. The labeling convention used in this report gives the TP designation first, followed by the Quad. The fill of each unit was passed through 1/4 inch hardware cloth and all observed lithic debris, formed tools, bone, shell, and botanical remains were collected for later processing in the laboratory. The choice of 5 cm levels was chosen in large part due to the success obtained in similar excavations (cf. Baxter and Connolly 1985).

Table 12.1 Summary of cultural material recovered from TP-B.

		Debitage			Tools				
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	Total
B	1	-	-	1	-	-	-	-	1
	2	-	1	-	-	-	-	-	1
	3	-	-	1	-	-	-	-	1
	4	-	1	2	-	-	-	-	3
	5	-	-	1	-	-	1	-	2
	6	-	3	4	-	-	-	1	8
	7	-	-	3	-	1	-	-	4
	8	1	2	11	-	-	-	-	14
	9	-	-	2	-	-	-	-	2
	10	-	-	1	-	1	-	-	2
	11	-	-	1	-	-	-	-	1
	12	-	-	-	-	-	-	-	0
	13	-	-	-	-	-	-	-	0
		1	7	27	0	2	1	1	39
D	2	-	-	-	-	-	-	-	0
	3	-	1	-	-	-	1	-	2
	4	-	-	-	-	-	-	-	0
	5	-	1	3	-	-	1	-	5
	6	-	-	-	-	-	1	-	1
	7	-	1	4	-	-	-	-	5
	8	-	1	1	-	-	-	-	2
	9	-	2	4	-	1	-	-	7
	10	-	-	1	-	-	-	-	1
	11	-	1	3	-	-	1	-	5
	12	-	6	1	-	1	1	-	9
	13	1	-	1	-	-	-	-	2
	14	-	1	10	-	-	1	-	12
	15	-	2	5	-	1	-	-	8
	16	-	-	4	-	1	-	-	5
	17	-	2	7	-	-	-	-	9
		1	18	44	0	4	6	0	73

TP-B was placed at the southeast corner of Corliss' 1980 test pit. Quad B of this unit rested upon the relatively flat ledge of the rockshelter, while Quad D, to the south, was situated upon the slope that fronted the shelter. The surface of TP-B was approximately 55 cm higher at its northeast corner than at its southeast corner. After the removal of the upper 15 cm in Quad B, excavation of this unit proceeded in 5 cm levels.

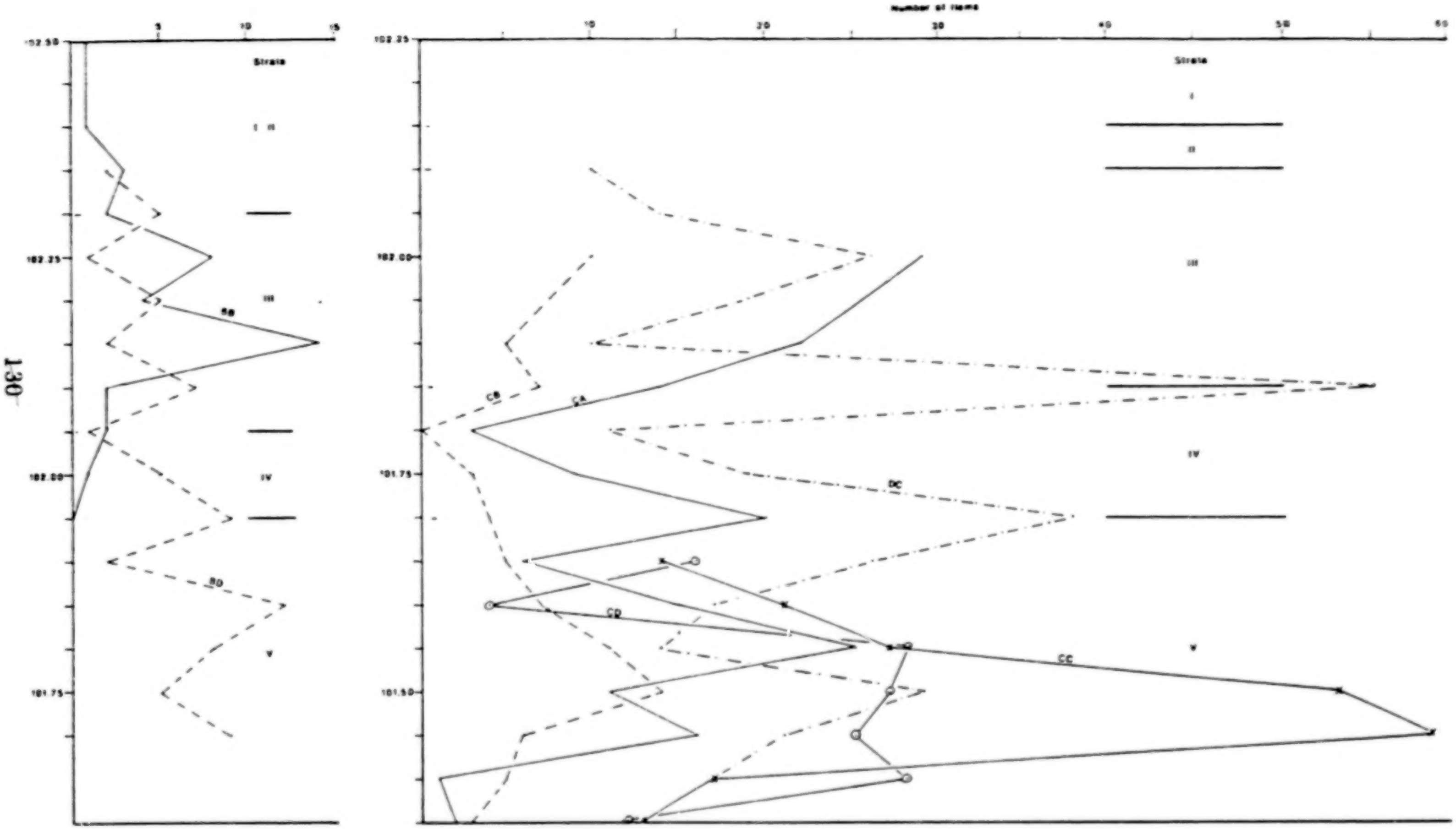

Figure 12.4. Vertical distribution of cultural material-- Upper Shelter.

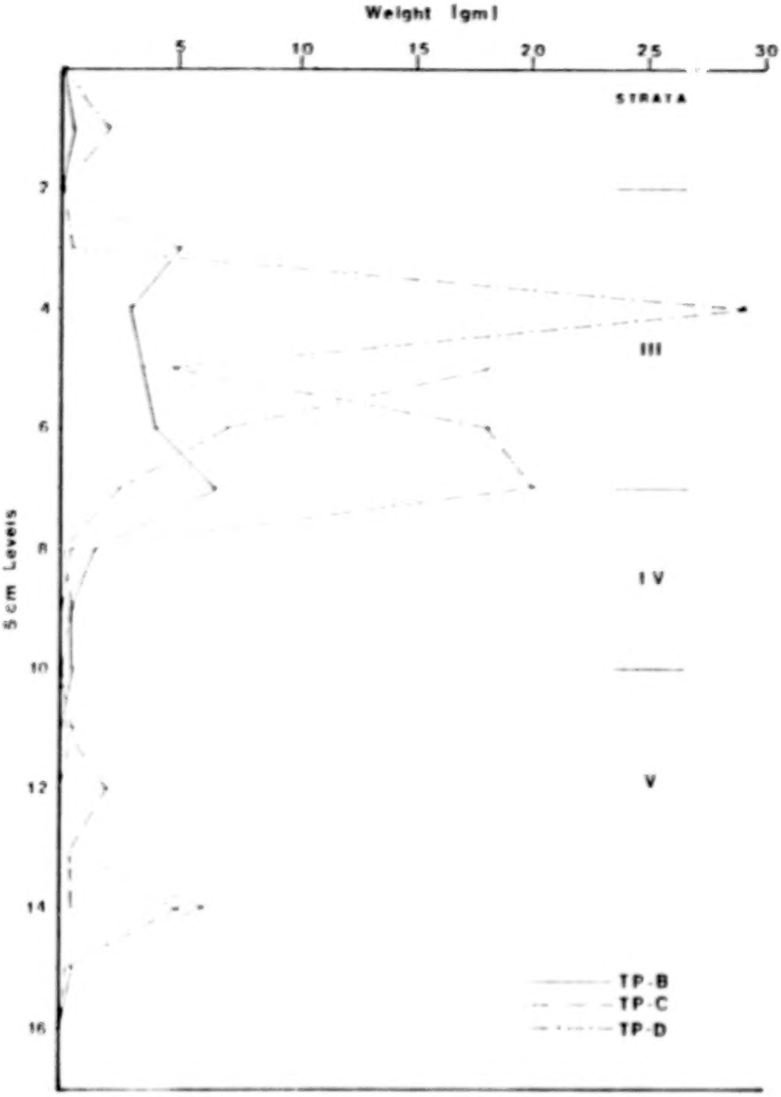

Figure 12.5 Vertical distribution of mussel shell by weight.

A charcoal sample collected at approximately 20 cm below the surface in Stratum III, returned a date of 350 ± 60 BP (Beta 17813).

At a depth of approximately 60 cm below the surface, most of the floor of Quad B of TP-B was covered by a large boulder which had begun to appear at a depth of 50 cm. Excavation of Quad B was terminated at approximately 70 cm below the surface, with work continuing in Quad D to approximately 1 meter.

Table 12.2. Summary of cultural material recovered from TP-C.

			Debitage					Tools	
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	Total
A	2	-	4	22	-	1	1	1	29
	3	-	3	18	-	1	-	-	22
	4	-	2	10	-	1	1	-	14
	5	-	-	3	-	-	-	-	3
	6	1	2	5	-	-	1	-	9
	7	-	7	12	-	-	-	1	20
	8	-	-	6	-	-	-	-	6
	9	-	3	9	-	2	1	-	15
	10	-	2	22	-	-	1	-	25
	11	-	4	6	-	1	-	-	11
	12	-	4	10	-	-	2	-	16
	13	-	1	-	-	-	-	-	1
	14	-	1	1	-	-	-	-	2
	Total	1	33	124	0	6	7	2	173
B	2	-	-	7	-	1	2	-	10
	3	-	1	4	-	-	-	-	5
	4	-	2	3	-	-	2	-	7
	5	-	-	-	-	-	-	-	0
	6	-	-	2	-	-	1	-	3
	7	-	-	2	-	1	1	-	4
	8	-	-	4	-	-	1	-	5
	9	-	-	3	-	1	3	-	7
	10	-	2	6	-	-	3	-	11
	11	-	2	11	-	-	1	-	14
	12	-	-	6	-	-	-	-	6
	13	-	1	3	-	-	1	-	5
	14	-	1	2	-	-	-	-	3
	Total	0	9	53	0	3	15	0	80
C	8	-	3	10	-	1	-	-	14
	9	-	3	15	-	1	2	-	21
	10	-	6	20	-	-	1	-	27
	11	-	6	47	-	-	-	-	53
	12	-	4	53	-	-	2	-	59
	13	-	1	14	-	1	1	-	17
	14	-	1	12	-	-	-	-	13
	Total	0	24	171	0	3	6	0	204
D	8	-	2	13	-	-	1	-	16
	9	-	-	4	-	-	-	-	4
	10	-	3	25	-	-	-	-	28
	11	-	5	21	-	-	1	-	27
	12	-	1	24	-	-	-	-	25
	13	-	1	23	-	-	4	-	28
	14	-	2	8	-	-	2	-	12
	Total	0	14	118	0	0	8	0	140

Table 12.3. Macrobotanical remains from Upper Shelter.

Unit/level	Hazel	Myrtle	Cherry
B/1		2	
B/2	1	5	
B/3		4	
B/4	1	2	
B/5	3	1	
B/6		1	
B/7	1		
B/9	1	6	
B/10		1	
C/1-7	13	13	1
C/8		1	
D/1	6	3	
D/6		4	
D/1-16	2		

The vertical distribution of debitage and tools recovered in TP-B indicates the presence of peak occurrences of material within Stratum III, at the strata IV/V interface, and within Stratum V (cf. Table 12.1 and Figure 12.4). Peaks in the vertical distribution of mussel shell by weight occurs at roughly the same points (Figure 12.5).

TP-C was placed 1 meter to the north of TP-B and immediately south of Corliss' 1981 test pits. As with TP-B, the surface of TP-C sloped to the south away from the rock face. Quads C and D, the south half of the test pit, were excavated as a unit to approximately 60 cm below the surface in order to help determine the stratigraphy and delineate disturbance from previous excavations as well as pothunters' activities. Because the first stratum was interpreted as one that included backdirt from previous excavations at Upper Shelter, it was removed from quads A and B as a unit. Stratum II was apparently also broached during the excavation of Stratum I. Beginning at approximately 30 cm below the surface, quads A and B were excavated in 5 cm levels, to their termination at 90 cm. Quads C and D were also excavated in 5 cm levels beginning at 60 cm below the surface to their termination at 90 cm.

From the vertical distribution of cultural material recovered in the 5 cm excavation levels of TP-C, it would appear that there are three peaks of density, one each in strata III and V, and at the interface of strata IV/V (cf. Table 12.2 and Figure 12.4). An analysis of the vertical distribution of mussel shell by weight in each of these quads is not as revealing (Figure 12.5). Botanical remains collected from TP-C include 13 hazelnut fragments, 14 myrtle nut fragments, and one choke cherry pit fragment (Table 12.3).

Table 12.4. Summary of cultural material recovered from TP-D.

		Debitage			Tools				
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	Total
C	1&2	-	3	5	-	-	1	1	10
	3	-	1	11	-	1	1	-	14
	4	-	2	23	-	-	-	1	26
	5	-	-	19	-	-	-	-	19
	6	-	3	7	-	-	-	-	10
	7	-	7	47	-	-	1	-	55
	8	-	-	11	-	-	-	-	11
	9	-	1	18	-	-	-	-	19
	10	-	1	36	-	-	1	-	38
	11	-	2	23	-	-	1	-	26
	12	-	2	15	-	-	-	-	17
	13	-	2	12	-	-	-	-	14
	14	-	4	23	-	2	-	-	29
	15	-	2	19	-	-	-	-	21
	16	-	1	16	-	-	-	-	17
		0	31	285	0	3	5	2	326

TP-D, the 1x1 meter test pit adjacent to Quad A of TP-C and west of Corliss' 1931 test pit, was excavated to a depth of approximately 90 cm below the surface. All but the first 25 cm were excavated in 5 cm levels. As with the other test pits at Upper Shelter, the fill of TP-D was screened through 1/4 inch hardware cloth.

The vertical distribution of cultural material in TP-D is consistent with that seen in TPs B and C, with peaks in strata III, IV, and V (cf. Table 12.4 and Figure 12.4). Though there is an absence of mussel shell in Stratum IV of TP-D, the vertical distribution of mussel shell by weight generally follows the distribution of lithic debris (Figure 12.5). The botanical remains recovered from TP-D include eight hazelnut fragments and seven myrtle nut fragments (Table 12.3).

The faunal remains recovered from Upper Shelter have been analyzed and the results of this analysis are presented in Chapter 14. Included among the identified species were deer, hare, squirrel, salmon and sucker. While recognized as a very gross measure, Figure 12.6 presents the vertical distribution of faunal remains by weight. It tends to conform to the pattern observed in the vertical distribution of lithic debitage and fresh water mussel.

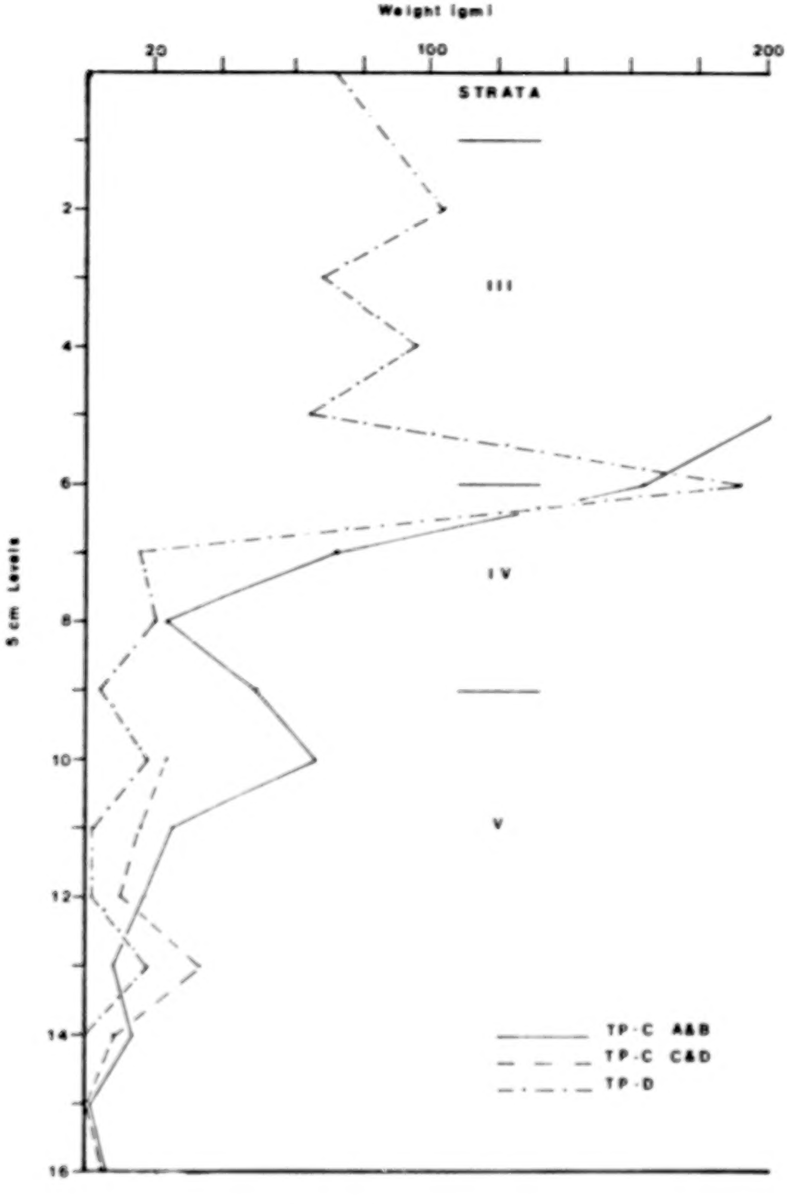

Figure 12.6. Vertical distribution of faunal remains by weight.

Summarizing, Upper Shelter contained cultural material to a depth of 90 cm below the surface. This evidence of human occupation of the rockshelter was found to be episodic, with peak occurances of material in Stratum III, at the strata III/IV interface, at the strata IV/V interface, and within Stratum V. Two radiocarbon assays date the cultural material from Stratum III. These are 350 ± 60 BP and 400 ± 70 BP.

CHAPTER 13

DESCRIPTION AND ANALYSIS OF UPPER SHELTER ARTIFACTS

Test excavations at Upper Shelter yielded 129 tools and 1259 pieces of lithic debitage. The artifact assemblage includes chipped and ground stone tools and worked bone. The artifacts have been separated into the functional and morphological classes commonly found in the archaeological literature of western Oregon. Metric data for each artifact is presented in the accompanying tables. The artifact labeling system and lot number system is presented in Appendix B.

TOOLS

Table 13.1. Summary of artifacts recovered from Upper Shelter.

	Material				
	OBS	CCS	BAS	SS	Totals
Projectile points	1	15	15		31
Preforms		1			1
Bifaces		7	4		11
Unifaces		11	4		15
Spall scrapers			9		9
Cores		2	5		7
Choppers			32		32
Flaked cobbles			4		4
Hammerstones			3		3
Pestles			3		3
Abraders/Smoothers				1	1
Worked bone (12)					12
(12)	1	36	79	1	129

Projectile Points

Thirty-one whole and fragmentary projectile points were recovered from Upper Shelter (Table 13.2). The raw material represented by these projectile points is evenly divided between CCS and basalt, with one obsidian fragment. Twenty-one are classifiable into five types, based primarily upon the morphological characteristics of the hafting element. Another four broken

Table 13.2. Metric data for Upper Shelter projectile points.

Type	Specimen Number	Raw Mat'l	Max Length	Blade Width	Neck Width	Thick	Prov
G-1	11-1	BAS	28.3	18.7	4.7	2.9	CA&B/1
G-1	37-1	BAS	23.6	16.2	3.8	2.9	BB/7
G-1	102-2	CCS	16.8	15.7	4.7	4.0	TP2/3
G-1	106-1	BAS	20.1	16.8	5.1	3.5	TP2x/2a
G-1	106-3	CCS	35.3	16.4	4.5	4.2	TP2x/2a
G-2	9-1	BAS	21.5*	16.0	3.7	5.5	CC&D/1-9
G-2	9-2	CCS	22.9	13.0	4.4	3.4	CC&D/1-9
G-2	43-501	CCS	25.1	14.4	3.7	3.9	BB/10
G-2	101-2	BAS	21.4*	17.2	4.5	4.0	TP2/3
G-2	101-3	CCS	18.4	14.3	3.4	4.0	TP2/3
G-2	102-1	BAS	17.3*	19.4	4.9	2.4	TP2/3
G-2	102-4	CCS	11.6*	12.9*	5.1	3.0	TP2/3
G-2	106-2	CCS	28.7*	14.0	4.3	3.0	TP2x/2a
G-2	117-1	CCS	11.6	9.6	3.0	1.7	C/14
G-2	120-1	BAS	21.0	15.6	4.6	3.6	DC/7
G-3	10-1	CCS	17.8*	14.4	4.7	3.0	CA&B/2
G-3	16-1	CCS	16.9	8.3	3.1	2.3	CA/4
G-3	93-1	CCS	20.3	11.2	4.0	3.7	BD/15
G-frag	9-3	BAS	18.7*	17.5	4.9	3.4	CC&D/1-9
	11-2	CCS	25.7*	16.5	4.2	3.2	CA&B/1
	101-4	BAS	11.5*	13.6	3.0	2.8	TP2/3
	116-1	BAS	28.0*	16.4	5.0	3.4	CD/14
NN	9-4	CCS	14.8	12.6	4.2	3.0	CC&D/1-9
PS	13-2	CCS	16.1	6.7	2.9	4.1	CB/2
PS	113-1	CCS	14.8*	7.4	4.1	4.0	CC/13
Frags	12-1	BAS	26.0*	9.2	-	2.8	CA/2
	48-1	OBS	17.5*	14.9	-	2.9	BD/7
	74-1	BAS	15.3*	6.0	-	2.4	CC/9
	102-3	BAS	14.0*	7.0	-	2.4	TP2/3
	102-5	BAS	15.3*	10.0	-	3.0	TP2/3
	105-1	BAS	26.5*	12.1	-	4.0	TP2x/1

measurements in mm; * indicates broken or incomplete specimen

specimens are considered to be fragmentary examples of the barbed and tanged series found at the Martin Creek Site. Of the classifiable projectile points, 86% (18) are barbed or tanged varieties, with the remaining 14% (3) representing other narrow-necked but un-barbed specimens (Table 13.3).

Table 13.3. Summary of Upper Shelter projectile points by type and material.

Type	OBS	CCS	BAS	Totals
G-1		2	3	5
G-2		6	4	10
G-3		3		3
G-Frag		1	3	4
PS		2		2
NN		1		1
Frags.	1		5	6
	1	15	15	31

Barbed and Tanged Points:

G-1 This type includes narrow-necked, basally notched points with short, contracting stems (Figure 13.1). Pointed barbs exceed the length of the stem. These are referred to in the literature as Gunther Barbed. (N=5)

G-2 This type includes narrow-necked, basally notched points with short, contracting or straight stems. Pointed tangs do not exceed the length of the stem. These are referred to in the literature as Gunther Stemmed or Gunther Tanged. (N=10)

G-3 This type includes narrow-necked, basally notched points with short, contracting stems. The shoulders of this point are asymmetric, one being perpendicular to the centerline of the point and the other being tanged. (N=3)

Four specimens with broken basal elements--barbs/tangs and stems--were collected. Their configuration is more similar to types G-1 and G-2 than to type G-3.

Other Narrow-necked Points

PS This type includes very small, narrow-necked points with convex blades and short, contracting pin stems. (N=2)

NN This point is a small, narrow-necked specimen with a contracting stem and a distal shoulder angle of 90 degrees. (N=1)

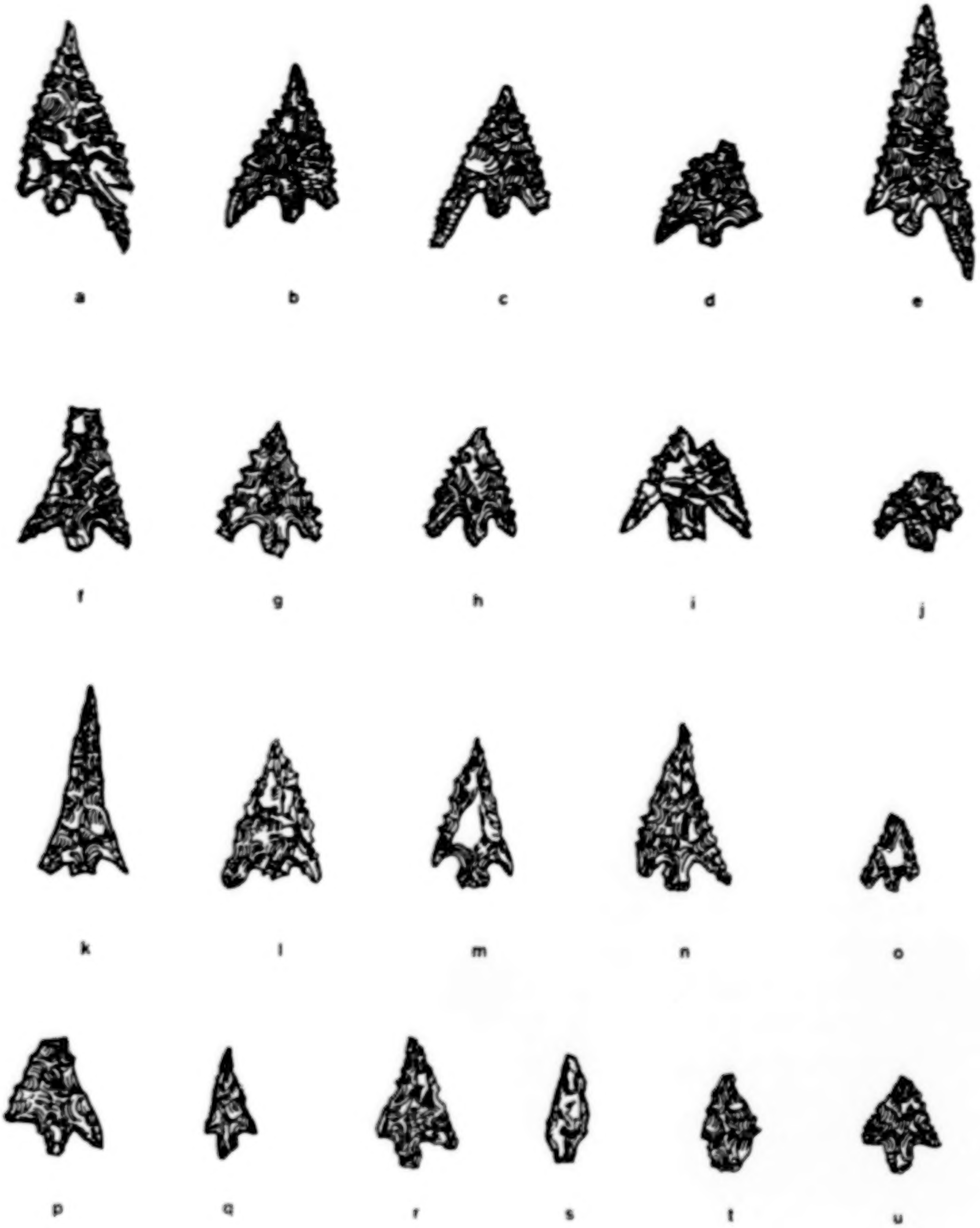

Figure 13.1. Projectile points from Upper Shelter (actual size).
a-e, G-1; f-o, G-2; p-r, G-3; s-t, PS; u, NN.

a.	11-1	f.	101-2	j.	102-4	n.	43-501	r.	93-1
b.	37-1	g.	120-1	k.	106-2	o.	117-1	s.	13-2
c.	106-1	h.	101-3	l.	9-1	p.	10-1	t.	113-1
d.	102-2	i.	102-1	m.	9-2	q.	16-1	u.	9-4
e.	106-3								

Table 13.4. Upper Shelter bifaces.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
9-8	CCS	23	9	5	0.9	CC&D/1-9
10-4	BAS	9*	17*	5	1.0	CA&B/2
13-1	BAS	23*	22*	6	2.2	CB/2
14-1	CCS	20*	14	4	1.1	CA/3
27-4	CCS	9*	19	4	0.9	CB/9
72-1	CCS	20*	9*	4	0.6	CC/8
74-3	BAS	16*	13	5	1.2	CC/9
90-1	CCS	22*	15	9	2.4	DC/3
104-1	CCS	14*	13	7	1.1	TP2/4
107-1	BAS	53*	25	15	20.5	Surf.
127-2	CCS	10*	10	3	0.4	DC/14

measurements in mm; * indicates broken or incomplete specimen

Fragments

Six additional projectile point fragments were recovered from Upper Shelter. Each of these appears to be distal (tip) fragments. One (48-1) is a serrated obsidian distal fragment.

Preform

One bifacially worked CCS specimen which appears to be an unfinished projectile point was collected (Figure 13.2). Specimen 94-1 is 17.5 mm in length, 12.7 mm wide, 3.2 mm thick, and weighs 0.7 gm. One basal notch has been prepared. This artifact was recovered from DD/16.

Bifaces

Eleven bifacially worked tool fragments were collected from the fill of Upper Shelter (Table 13.4). Of these, 64% (7) are CCS and 36% (4) are basalt. Because of their fragmentary condition no morphological types are distinguishable.

Flake Unifaces

This class of tool includes intentionally modified flakes with edges that are unifacially worked. These tools served a number of functions--cutting, scraping, graving and shaving. The 15 unifaces recovered from Upper Shelter have been classified according to a scheme developed by Pettigrew (cf. 1980:7-8; 1982:75-84, 160) which employs the morphology of the edge (Table 13.5). Among the edge types defined in this system and observed in the Martin Creek assemblage are: types 1, 2, 3 and 5 (for definitions see page 67, above).

Figure 13.2 Unfinished projectile point and endscraper from Upper Shelter (shown actual size).

a. 94-1 b. 105-2

Table 13.5. Upper Shelter uniface data.

Edge Type	Specimen Number	Raw Mat'l	Flake Size	Prov.
1	12-3	CCS	5	CA/2
1	105-3	BAS	2	TP2x/1
2	10-3	CCS	2	CA&B/2
2	11-3	CCS	2	CA&B/1
2	26-2	CCS	2	CA/9
3	9-5	CCS	2	CC&D/1-9
3	9-6	CCS	3	CC&D/1-9
3	26-3	CCS	1	CA/9
3	74-2	CCS	2	CC/9
3	77-1	BAS	6	CB/10
3	80-1	CCS	3	CA/11
3	105-4	BAS	1	TP2x/1
3	106-4	BAS	4	TP2x/2a
5	105-2	CCS	2	TP2x/1
1,2	127-1	CCS	3	DC/14

Table 13.6. **Summary of flake unifaces by edge type, material and size.**

Edge	CCS					BAS						
Type	1	2	3	4	5	1	2	3	4	5	6	Total
1					1		1					2
2		3										3
3	1	2	2			1			1		1	8
5		1										1
1,2			1									1
	1	6	3	0	1	1	1	0	1	0	1	15

non-contiguous edges indicated with a comma (,)

Table 13.7. Upper Shelter spall scrapers.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
10-2	BAS	68	58	19	71	CA&B/2
13-3	BAS	78	46	14	70	CB/2
17-2	BAS	112	99	22	288	CA/4
27-3	BAS	80	147	23	305	CB/9
33-501	BAS	88	72	16	125	BB/5
73-1	BAS	83	55	17	78	CD/8
81-1	BAS	64	80	22	120	CB/11
82-2	BAS	58	88	22	94	CA/12
103-5	BAS	82	103	16	107	TP-2

measurements in mm

Of the unifaces recovered from the fill of Upper Shelter, 73% (11) are CCS and 27% (4) are basalt. All but one of these artifacts have a single modified edge (Table 13.6).

Spall Scrapers

This class of tool is characterized by relatively thin, ovate primary flakes with an edge that has been modified either intentionally or through use (Figure 13.3). Nine spall scrapers, all of basalt material, were recovered from Upper Shelter (Table 13.7).

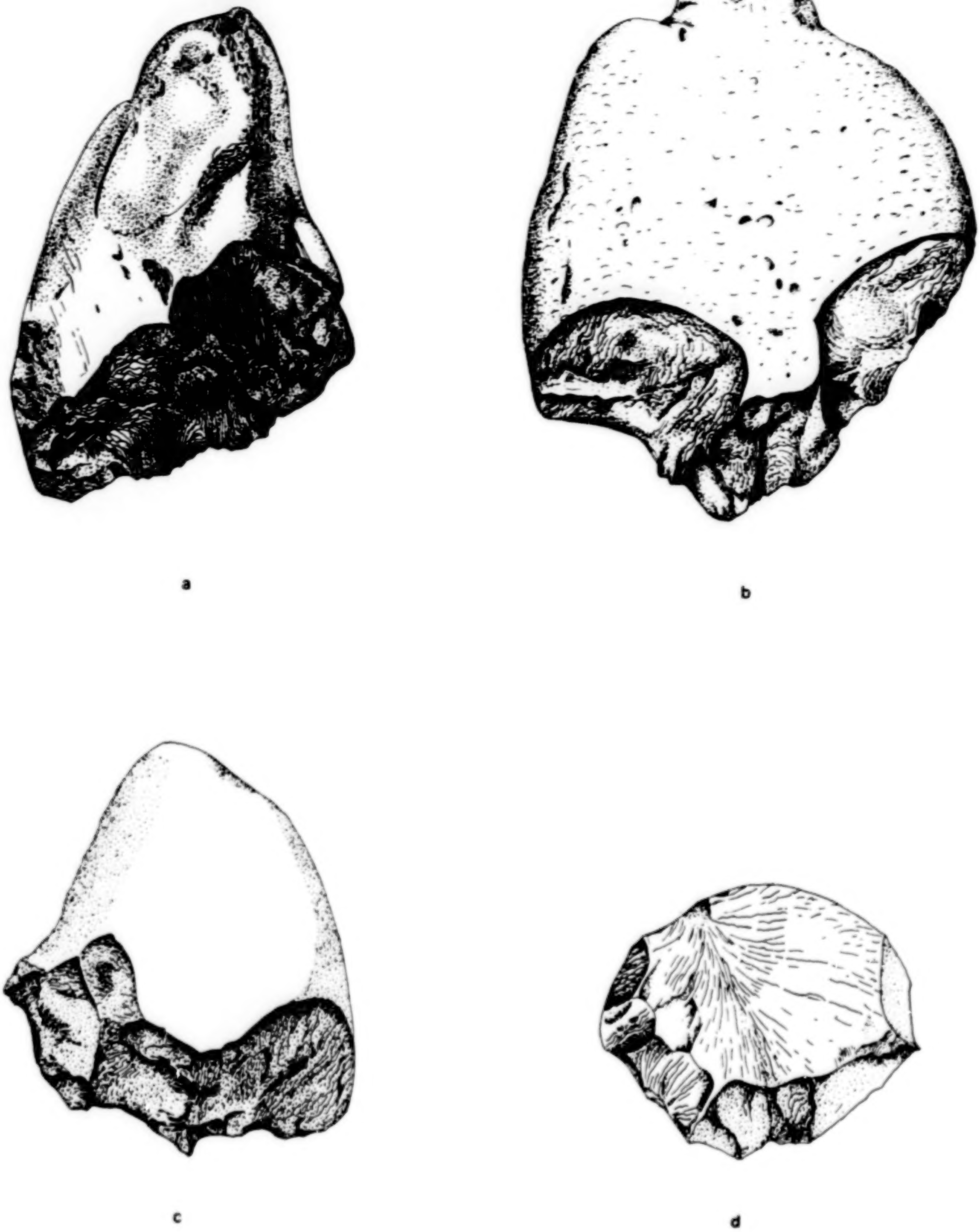

Figure 13.3. Upper Shelter choppers (a-c) and spall scraper (d) (65% actual size).
a. 9-501 b. 107-2 c. 116-501 d. 81-1

Table 13.8. Upper Shelter cores.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
17-1	BAS	96	122	74	1055	CA/4
23-1	CCS	76	52	35	102	CB/7
23-501	BAS	133	84	60	616	CB/7
42-501	CCS	53	59	14	51	BD/9
114-2	BAS	54	72	34	175	CD/13
111-2	BAS	67	78	34	205	CC/12
110-1	BAS	72	88	50	450	CD/11

measurements in mm

Cores

This class of artifact represents chunks of raw material from which a number of flakes have been struck, as the first stage of lithic reduction. While cores are not generally considered to be tools, the flakes removed from them have the potential for being used as expedient tools, or being worked into bifacially flaked tools such as projectile points or knives.

Seven cores were recovered from Upper Shelter (Table 13.8). Of these, 71% (5) are basalt and 29% (2) are CCS. One large basalt specimen (17-1) may also have been used as a maul.

Choppers

This class of artifact includes cobble-sized specimens that generally have a single, percussion flaked edge (Figure 13.3). These flaked edges often show signs of heavy crushing. This is the most numerous artifact class from Upper Shelter, with 32 basalt specimens recovered (Table 13.9). One of these (107-2) has had one end shaped by pecking and grinding.

Flaked Cobbles

Artifacts of this class are water rounded cobbles from which one or two flakes have been removed (Table 13.10). No other modification is apparent on these specimens.

Hammerstones

The three basalt hammerstones collected from Upper Shelter exhibit light pecking scars at an end of the cobble (Table 13.11).

Table 13.9. Upper Shelter choppers.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
9-7	BAS	42*	93	39	122	CC&D/1-9
9-9	BAS	59	73	37	232	CC&D/1-9
9-501	BAS	125	93	58	730	CC&D/1-9
11-4	BAS	131	114	68	1195	CA&B/1
11-501	BAS	97	111	22	382	CA&B/1
16-2	BAS	92	83	29	262	CA/4
25-1	BAS	42*	84	32	117	CB/8
27-1	BAS	65	74	33	178	CB/9
27-501	BAS	110	59	27	278	CB/9
34-501	BAS	91	93	54	566	BD/5
36-501	BAS	76*	86	41	375	BD/6
46-501	BAS	95	102	29	474	BD/11
48-501	BAS	75	102	37	320	BD/12
76-1	BAS	74	53*	33	165	CA/10
77-502	BAS	53	92	57	326	CB/10
77-503	BAS	80*	85	40	355	CB/10
78-2	BAS	42*	73	27	80	CC/10
82-1	BAS	68	69	27	158	CA/12
85-501	BAS	80	93	31	340	CB/13
90-501	BAS	96	80	39	400	DC/3
92-501	BAS	81	109	33	410	BD/14
103-1	BAS	72	91	43	287	TP2/3
107-2	BAS	140	115	33	630	Surf.
111-1	BAS	68	69	36	168	CC/12
113-501	BAS	78	120	57	833	CC/13
114-4	BAS	56	56	27	110	CD/13
114-501	BAS	92	105	55	690	CD/13
116-501	BAS	99	90	37	410	CD/14
123-1	BAS	75	106	37	409	DC/10
124-501	BAS	91	116	40	570	DC/11
130-2	BAS	79	97	39	304	DC/1-16
130-4	BAS	49*	73	31	140	DC/1-16

measurements in mm; * indicates broken specimen

Pestles

One minimally shaped ovate basalt cobble (100-1) is interpreted as a complete pestle, the distal end of which has been flattened through use (Figure 13.4). Two basalt distal fragments of pestles were also collected from the surface of Upper Shelter (Table 13.12). Specimen 107-4 has been shaped by pecking and the distal end is polished. Specimen 107-3 shows some evidence of localized pecking on its edges and distal end.

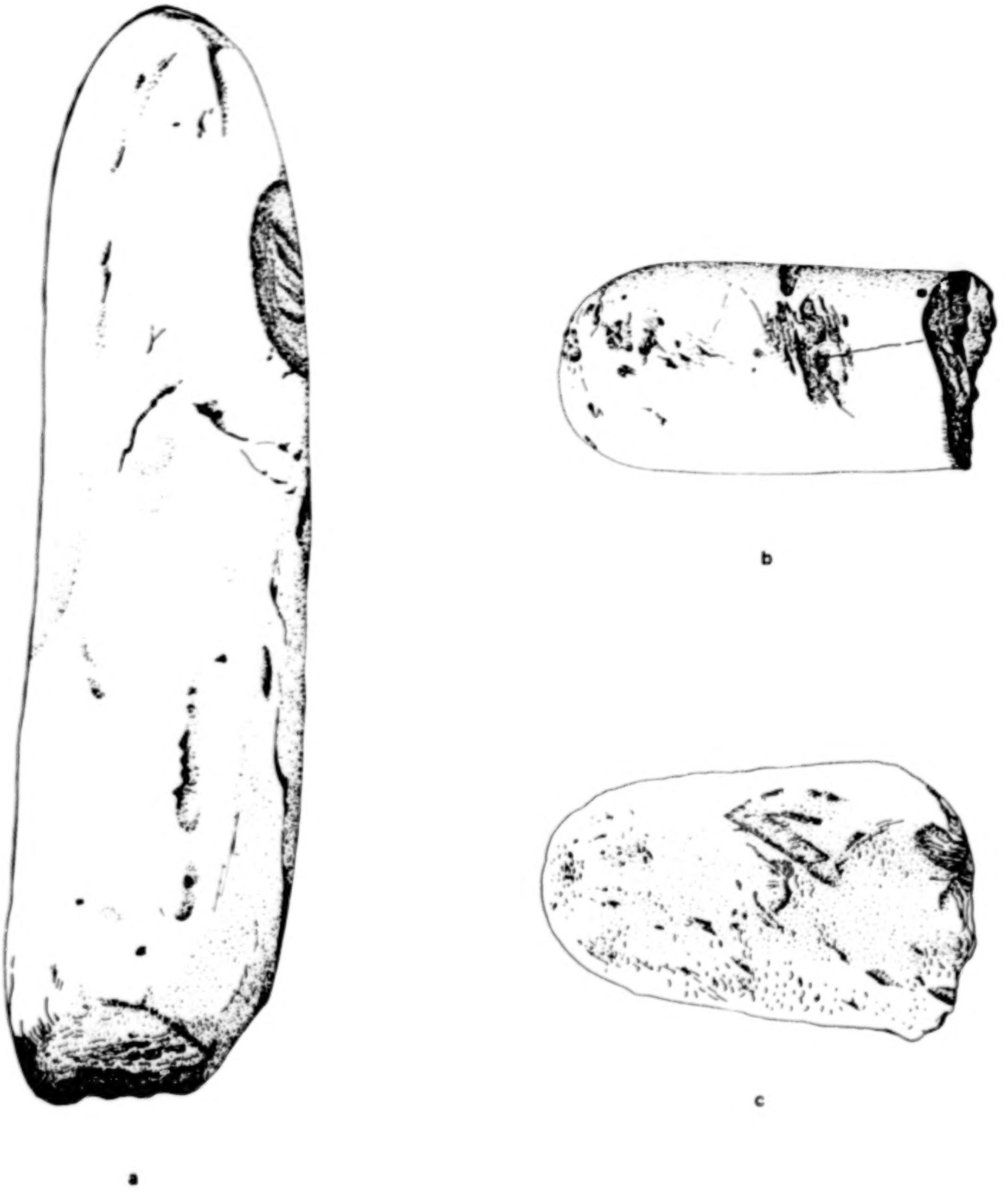

Figure 13.4. Pestles from Upper Shelter (shown 65% actual size).

a. 100-1 b. 107-3 c. 107-4

Table 13.10. Upper Shelter flaked cobbles.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
11-5	BAS	72	53	32	198	CA&B/1
21-1	BAS	90	109	33	580	CB/6
26-1	BAS	57	71	26	154	CA/9
114-3	BAS	64	78	29	180	CD/13

measurements in mm

Table 13.11. Upper Shelter hammerstones.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
20-1	BAS	122	106	62	1067	CA/6
31-1	BAS	85	51	31	205	BD/3
89-501	BAS	86	59	41	280	DC/1

measurements in mm

Table 13.12. Upper Shelter pestles.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
100-1	BAS	248	71	77	1965	TP2/2
107-3	BAS	100*	51	48	450	Surf.
107-4	BAS	100*	60	38*	352	Surf.

measurements in mm * indicates broken specimen

Abrader/Smoother

A spatulate-shaped piece of sandstone (107-5) with one pointed end and the other blunted and broken was recovered from the surface of Upper Shelter (Figure 13.5). Though it may have also been used as a maul, its flattened and smoothed faces suggest its use as an abrader or smoother. This artifact is 273 mm in length, 77 mm wide, 49 mm thick, and weighs 1326 gm.

Figure 13.5. Sandstone abrader/smoother (107-5) from Upper Shelter (shown 65% actual size).

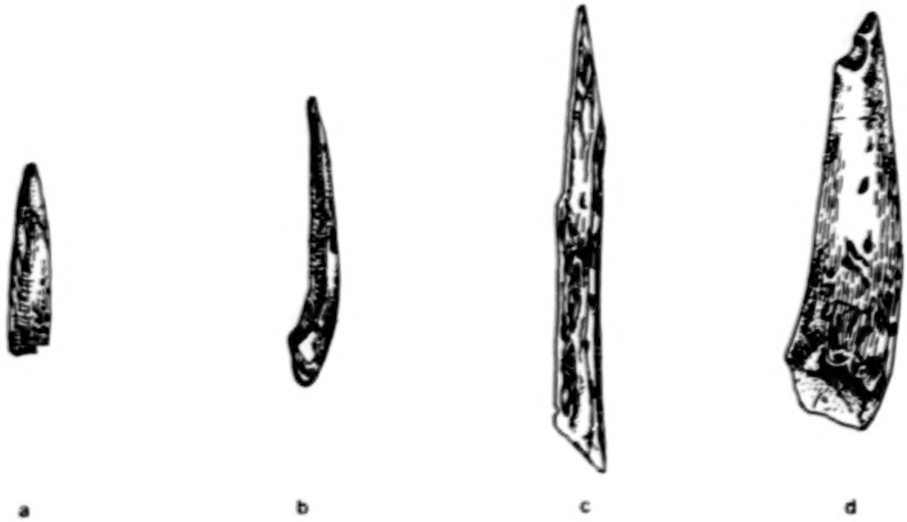

Figure 13.6. Worked bone and antler from Upper Shelter (shown actual size).

a. 11-6 b. 10-5 c. 101-1 d. 11-7

Table 13.13. Upper Shelter worked bone.

Specimen Number	Length	Width	Thickn's	Weight	Prov.
9-10	15	14	3	0.7	CC&D/1-9
10-5	38	6	3	0.6	CA&B/2
10-6	12	6	2	0.1	CA&B/2
11-6	25	5	3	0.5	CA&B/1
11-7	56	14	12	3.5	CA&B/1
11-8	35	11	4	1.1	CA&B/1
12-2	92	14	10	7.8	CA/2
22-1	16	6	3	0.3	CA/7
35-1	45	12	11	4.8	BB/6
89-1	118	20	12	17.4	DC/1
91-1	40	13	11	3.6	DC/4
101-1	63	7	3	1.0	TP2/3

measurements in mm

Worked Bone

Twelve pieces of bone that show signs of modification were collected from Upper Shelter (Figure 13.6 and Table 13.13). Three of these are pieces of antler (35-1, 91-1, 11-7), five show minimal signs of work such as cut marks (12-2, 11-8, 9-10, 22-1, 89-1), one is a sharpened splinter (101-1), one is a small, flattened piece (10-6), one is the pointed, distal end of a needle or awl (11-6), and one is a pointed needle (10-5). Only specimen 91-1, a piece of antler, appears to be calcined.

DEBITAGE ANALYSIS

Lithic debitage, the by-product of the manufacture of chipped stone tools, is usually the most common type of cultural debris found at archaeological sites. While not generally regarded as containing temporally diagnostic features, an analysis of its constituents can help address such questions as the lithic reduction activities conducted at the site and the relative distance to raw material sources. A presentation of this data will provide other researchers with information suitable for comparison and may aid in the discovery of regional patterns as well as defining site signatures.

Each of the 1459 pieces of debitage collected from Upper Shelter was categorized according to its (a) material type, (b) reduction stage, (c) completeness, and (d) size. This scheme is a modification of one proposed by Sullivan and Rozen (1985) and is currently being used by those conducting research in the Umpqua Basin (cf. Baxter 1987; O'Neill 1988a, 1988b) and elsewhere in Oregon (cf. Oetting 1987).

Raw Material

Three raw material types are represented in the lithic debitage from Upper Shelter. Basalt is by far the most common material with 81.9% (1207). CCS is represented by 16.7% (246) and obsidian by 1.4% (20). Both CCS and basalt are locally abundant raw materials, occurring as cobbles in gravel bars of the river (cf. Ramp 1972). Prehistoric quarries where CCS was collected are reported in the Umpqua Basin.

Table 13.14. Debitage summary -- flake types.

	Flake Types				
	P	S	I	D	Totals
OBS	0	0	19 (95.0)	1 (5.0)	20
CCS	15 (6.3)	17 (7.1)	137 (57.3)	70 (29.3)	239
BAS	130 (10.8)	315 (26.3)	560 (46.7)	195 (16.3)	1200
	145 (9.9)	332 (22.8)	716 (49.1)	266 (18.2)	1459

Key: P=primary flake; S=secondary flake; I=interior flake; D=debris
n/(%)

Table 13.15. Debitage Summary -- presence/absence of platform.

	P	A	D	Totals
OBS	15	4	1	20
	(75.0)	(20.0)	(5.0)	
CCS	58	111	70	239
	(24.3)	(46.4)	(29.3)	
BAS	279	726	195	1200
	(23.3)	(60.5)	(16.3)	
	352	841	266	1459
	(24.1)	(57.6)	(18.2)	

Key: P=platform present; A=platform absent; D=debris
n/(%)

Table 13.16. Debitage summary -- flake size.

	Size (cm)						
	1	2	3	4	5	>5	Totals
OBS	12	8					20
	(60.0)	(40.0)					
CCS	66	129	40	4			239
	(27.6)	(54.0)	(16.7)	(1.7)			
BAS	175	604	219	95	49	58	1200
	(14.6)	(50.3)	(18.3)	(7.9)	(4.1)	(4.8)	
	253	741	259	99	49	58	1459
	(17.3)	(50.8)	(17.8)	(6.8)	(3.4)	(4.0)	

Obsidian is not reported as locally occurring (cf. Skinner 1983) and its presence as debitage and finished tools in Umpqua Basin archaeological sites suggests its transportation into the area by human means. Recent obsidian sourcing of specimens collected from archaeological sites in the upper Umpqua Basin have shown that distant sources were exploited. The two most common sources, as determined by X-ray flourescence of trace elements, were in the Newberry Crater region of western Fort Rock Basin and the Silver Lake/Sycan Marsh region of south central Oregon (S. Berryman 1987; J. Berryman 1987).

The relative proportions of raw material types for the lithic tools from Upper Shelter generally follow those observed for the debitage. Basalt tools account for 67.5% (79) of this assemblage; CCS tools 30.8% (36). Obsidian and sandstone account for 0.8% (1) each.

Flake Type

Individual debitage specimens were sorted according to their reduction stage. Four lithic reduction stage classifications were used to separate the debitage. These include:

a) primary flakes are those with cortex covering the entire dorsal surface;
b) secondary flakes contain cortex on a portion of the dorsal surface;
c) interior flakes are free of cortex;
d) debris, also referred to as "angular waste," does not share the morphological characteristics of flakes -- i.e., striking platform, bulb of percussion, etc.

The majority of the flakes of each material type are interior flakes (Table 13.14), suggesting an emphasis upon tool manufacture and repair rather than core reduction. The large proportion of basalt primary and secondary flakes may represent the heavier nature of the tools manufactured of this material. No primary or secondary obsidian cortex flakes were recovered, emphasizing this material's non-local origin.

Presence/Absence of Platform

The presence or absence of a striking platform was recorded for each specimen (Table 13.15). In the Sullivan and Rozen scheme, it is thought that tool manufacture is represented by the presence of large numbers of flake fragments and broken flakes; core reduction is indicated by large numbers of complete flakes and debris (1985:762).

Debitage Size

Each piece of debitage was measured by placing it upon a grid of concentric circles measuring .5 through 8 cm in diameter. The majority of the flakes recovered from Upper Shelter are of the 2 cm range (Table 13.16), with a sizeable proportion of the basalt debitage greater than 2 cm. This would seem to reflect not only the easy avialability of this material, but also the heavy tools which were manufactured of basalt.

CHAPTER 14

FAUNAL REMAINS FROM THE MARTIN CREEK SITE

by Ruth L. Greenspan

The faunal assemblage from the Martin Creek Site was identified using comparative skeletal materials at the Mammals Division, National Museum of Natural History, and the Condon Museum of Geology. The data were catalogued and analyzed using a microcomputer-based specialized file management program called Animals, written by Doug Campana and Pam Crabtree.

The faunal assemblage from Upper Shelter includes 3972 specimens, which are, for the most part, fairly well preserved. However, they are also highly fragmentary, and consequently many of them could be identified to only fairly gross taxonomic levels. Table 14.1 shows the distribution of taxa by component at Upper Shelter.

Nearly 84% of the assemblage was classified as undetermined large mammal. The only large mammal positively identified is deer (Odocoileus sp.), and it is highly likely that the majority of the undetermined large mammal specimens also represent deer. The species of deer occurring in the site vicinity today is the black-tailed deer, Odocoileus hemionus columbianus. The Columbian white-tailed deer, O. virginianus leucurus, also occurs in portions of the Umpqua Basin. It is presently considered a Federal endangered species, but in the past was very common in parts of western Oregon. During historic times the Umpqua Basin appears to have been the southern extent of the range of the Columbian white-tailed deer (Bailey 1936:90). None of the deer remains recovered from Upper Shelter was identified to the species level.

A few specimens classified as large artiodactyl appear larger than deer, and probably represent elk. Other large mammals that occur in the vicinity are black bear and cougar; there is no clear evidence that these animals were represented at the site, however.

Smaller mammals occurring in the assemblage include two specimens identified as hare (Lepus sp.), one specimen of squirrel (Sciuridae), and a few undetermined rodent specimens. Bird remains include four specimens, none of which was identifiable, and one specimen of undetermined turtle was recovered. The assemblage also includes 28 specimens of fish, which are discussed below. In addition to the vertebrate fauna, four specimens of undetermined shell were included in the analyzed assemblage that probably represent freshwater mussel.

Although fish constitute less than 1% of the assemblage, they are the second most frequently represented class of vertebrates found at the site.

Table 14.1. Distribution of faunal remains by component from Upper Shelter, Martin Creek Site.

Taxon	A	B	C	Mixed	TP-A	Total
	Component					
Deer	110	2	8	15	6	141
Artiodactyl	30	3	3			36
Undetermined large mammal	2061	205	578	126	378	3348
Hare	2					2
Squirrel		1				1
Rodent	6				6	12
Undetermined small mammal	1					1
Undetermined mammal	99	27	32		37	195
Salmonid	11		1		5	17
Cyprinid	1				3	4
Sucker	2	1				3
Undetermined fish	4					4
Undetermined bird	3				1	4
Undetermined turtle					1	1
Undetermined shell			4			4
Undetermined species	154	2	32		6	199
TOTAL	2489	241	658	141	443	3972

The identified specimens include salmonids (Salmonidae), suckers (Catostomidae), and cyprinids (Cyprinidae).

The salmonid specimens are probably coho (Onchorynchus kisutch) or chinook (O. tshawytscha) salmon, although some specimens might represent rainbow or steelhead trout (Salmo gairdneri). The sucker specimens most likely represent the largescale sucker (Catostomus macrocheilus), the only sucker currently found in the area. The cyprinid remains identified from Upper Shelter are too fragmentary to make a positive species identification. However, they fall within the size range of the Umpqua squawfish (Ptychochielus umpquae), and are morphologically consistent with that species.

In addition to these fish that are native to the Umpqua drainage, the assemblage includes two specimens that were identified as Ictalurus sp., or bullhead. Modern catfish are not native west of the Rocky Mountains, and were first introduced to Oregon in the 1870's. The two specimens in the Upper Shelter assemblage were both found in the same lot, and appear to be recent intrusions into the site. They are both complete bones, are slightly translucent, and lack the discoloration that is characteristic of prehistoric faunal specimens.

Table 14.2. Distribution of vertebrate classes by component from Upper Shelter, Martin Creek Site.*

Taxon	A	B	C	Mixed	TP-A	Total
			Component			
Large mammal	2300 (98.7)	237 (99.2)	621 (99.8)	141 (100)	421 (96.3)	3720 (98.7)
Small mammal	9 (0.4)	1 (0.4)			6 (1.4)	16 (0.4)
Fish	18 (0.8)	1 (0.4)	1 (0.2)		8 (1.8)	28 (0.7)
Bird	3 (0.1)				1 (0.2)	4 (0.1)
Reptile					1 (0.2)	1 (0.1)
TOTAL	2330	239	622	141	437	3769

* percentages shown in parentheses

DISCUSSION

Table 14.2 shows the distribution of broad taxonomic groups of vertebrate fauna by component at Upper Shelter of the Martin Creek Site. In all components large mammals constitute the overwhelming majority of the assemblage. A greater diversity of taxa is indicated in Component A and Test Pit A than in the other components; however, in all categories other than large mammal, the number of specimens represented is so small that any apparent differences between components are unlikely to be statistically valid.

The faunal evidence from this site indicates that hunting of deer was a major activity for the people who used the shelter. The ethnohistoric record substantiates the importance of deer in aboriginal economies in this region (see Chapter 2, this report). However, other game, waterfowl, and particularly fish are believed to have been exploited to a greater extent than the faunal assemblage from this site would suggest. This discrepancy could be a function of small animals being processed in a manner that would not result in their remains being deposited in the shelter. Or, it might be a function of the shelter representing only a small part of the seasonal subsistence round. This interpretation is consistent with other assemblages from the site.

CHAPTER 15

UPPER SHELTER CULTURAL COMPONENTS

An examination of the vertical distribution of lithic debitage and tools in Upper Shelter indicates the presence of at least three peaks of density (Figure 12.4). An examination of the vertical distribution of fresh water mussel shell and faunal material by weight tends to mirror that seen for lithic debitage (Figures 12.5 and 12.6). For these reasons the cultural

Table 15.1. Summary of artifacts from Upper Shelter components.

	Components			
	A	B	C	Totals
Projectile points	20	6	5	31
Preforms			1	1
Bifaces	5	2	4	11
Unifaces	7	2	6	15
Spall scrapers	5		4	9
Cores	2	2	3	7
Choppers	7	7	16	30*
Flaked cobbles	1	1	2	4
Hammerstones	2	1		3
Pestles	3			3
Abraders	1			1
Worked bone (12)				12
	63	23	41	127
Debitage				
OBS	18 (2.9)	1 (0.5)	1 (0.2)	20
CCS	116 (18.8)	39 (18.6)	84 (13.3)	239
BAS	483 (78.3)	170 (81.0)	547 (86.6)	1200
	617	210	632	1459

* Two choppers were recovered for which no component provenience is available.

Table 15.2. Distribution of Upper Shelter projectile points by component.

	Components						
	A		B		C		Totals
	n	%	n	%	n	%	
G-1	5	(100)					5
G-2	6	(60)	3	(30)	1	(10)	10
G-3	2	(67)			1	(33)	3
G-Frags	2	(50)	1	(25)	1	(25)	4
PS	1	(50)			1	(50)	2
NN			1	(100)			1
Frags.	4	(67)	1	(17)	1	(17)	6
	20		6		5		31

Key: G-1, Gunther Barbed; G-2, Gunther Stemmed; G-3, Asymmetric tanged and shouldered; G-frags, specimens too fragmentary to assign to either G-1 or G-2; PS, pin stem; NN, other narrow-necked point.

material has been separated into three cultural components by soil strata. Component A includes the remains found in strata I through III and at the interface of strata III/IV. Component B includes the material of Stratum IV and the interface of strata IV/V. Component C includes the cultural material of Stratum V. An analysis of the debitage from each of these components (Tables 15.3-15.5) does not indicate that raw materials were treated differently in these periods of occupation. Two radiocarbon assays date the upper component to the Late Archaic period.

COMPONENT A

Component A is found in the upper three soil strata of Upper Shelter. Two radiocarbon assays were returned on charcoal collected from this component: 350 ± 60 BP and 400 ± 70 BP. The artifact assemblage of Component A contains 32% projectile points. This includes all of the specimens identified as Gunther Barbed and 60% (6) of those identified as Gunther Stemmed (Table 15.2). The majority of worked bone recovered from Upper Shelter is found in Component A. Three pestles and one sandstone abrader/smoother are also represented in the Component A assemblage.

Macrobotanical remains from Component A include 28 hazelnut fragments, 41 myrtle nut fragments, and a piece of a choke cherry pit. Of the 192 grams of mussel shell collected from Upper Shelter, 88% (169 grams) was recovered from Component A.

Table 15.3. Summary of flake types by material and component.

	Components A	B	C	Totals
		OBS		
Primary	0	0	0	0
Secondary	0	0	0	0
Interior	18 (100)	0	1 (100)	19
Debris	0	1 (100)	0	1
	18	1	1	20
		CCS		
Primary	8 (6.9)	3 (7.7)	4 (4.8)	15
Secondary	7 (6.0)	5 (12.8)	5 (6.0)	17
Interior	71 (61.2)	19 (48.7)	47 (56.0)	137
Debris	30 (25.9)	12 (30.8)	28 (33.3)	70
	116	39	84	239
		BAS		
Primary	48 (9.9)	23 (13.5)	59 (10.8)	130
Secondary	140 (29.0)	43 (25.3)	132 (24.1)	315
Interior	246 (50.9)	74 (43.5)	240 (43.9)	560
Debris	49 (10.1)	30 (17.6)	116 (21.2)	195
	483	170	547	1200

n/(%)

Table 15.4. Flake completeness summary by component.

	Components A	 B	 C	 Totals
		OBS		
Present	14 (77.8)	0	1 (100)	15
Absent	4 (22.2)	0	0	4
Debris	0	1 (100)	0	1
	18	1	1	20
		CCS		
Present	35 (30.2)	3 (7.7)	20 (23.8)	58
Absent	51 (44.0)	24 (61.5)	36 (42.9)	111
Debris	30 (25.9)	12 (30.8)	28 (33.3)	78
	116	39	84	239
		BAS		
Present	133 (27.5)	37 (21.8)	109 (19.9)	279
Absent	301 (62.3)	103 (60.6)	322 (58.9)	726
Debris	49 (10.1)	30 (17.6)	116 (21.2)	195
	483	170	547	1200

n/(%)

Table 15.5. Summary of flake sizes by component.

		Components		
	A	B	C	Totals
		OBS		
1	11 (61.1)	0	1 (100)	12
2	7 (38.9)	1 (100)	0	8
	18	1	1	20
		CCS		
1	40 (34.5)	7 (17.9)	19 (22.6)	66
2	53 (45.7)	24 (61.5)	52 (61.9)	129
3	21 (18.1)	8 (20.5)	11 (13.0)	40
4	2 (1.7)	0	2 (2.4)	4
	116	39	84	239
		BAS		
1	86 (17.8)	20 (11.8)	69 (12.6)	175
2	225 (46.6)	78 (45.9)	301 (55.0)	604
3	99 (20.5)	31 (18.2)	89 (16.3)	219
4	30 (6.2)	25 (14.7)	40 (7.3)	95
5	21 (4.3)	7 (4.1)	21 (3.8)	49
>5	22 (4.6)	9 (5.3)	27 (4.9)	58
	483	170	547	1200

Identified faunal remains include deer, hare, salmon, sucker, and possibly squawfish. Fragments of undetermined large mammal numbered 2061 and probably represent deer. More robust specimens may represent elk.

The lithic debitage from this component includes 2.9% obsidian (18), 18.8% (116) CCS, and 78.3% (483) basalt. Of the 20 pieces of obsidian recovered from Upper Shelter, 90% (18) was recovered from Component A.

COMPONENT B

Component B is found in the 15 cm thick, light brown, sandy silt of Stratum IV. The activity represented in this component appears to have been most intense at the bottom of the stratum, at the interface of strata IV and V (Figure 12.4).

Basalt choppers comprise 30% (7) and projectile points 26% (6) of the assemblage from Component B (Table 15.1). The projectile points recovered from this component are predominantly (50%) type G-2.

Macrobotanical remains from Component B include 2 myrtle nut fragments. Faunal remains include deer, squirrel, sucker and 205 fragments of undetermined large mammal. Fresh water mussel is minimally represented with 1.7 grams.

The lithic debitage from this component includes 0.5% (1) obsidian, 18.6% (39) CCS, and 81% (170) basalt.

COMPONENT C

Component C is found in the medium brown sandy silt of Stratum V. Cultural material was recovered from approximately 35 cm of fill and appears to be most intense between 70-85 cm below the surface (Figure 12.4).

Projectile points from Component C comprise 12% (5) of the assemblage and include one each of types G-2, G-3 and PS. Flake unifaces (15%) and basalt choppers (39%) contribute sizeable proportions to the assemblage.

Faunal remains include deer, salmon, and 578 fragments of undetermined large mammal. Fresh water mussel shell collected from the fill of Component C weighs 21.2 grams. No macrobotanical remains were recovered.

The lithic debitage of this component includes 0.2% (1) obsidian, 13.3% (84) CCS, and 86.6% (547) basalt.

UPPER SHELTER SUMMARY

Upper Shelter appears to have been intermittently occupied during the Late Archaic by small groups of people, perhaps the size of a nuclear family, who exploited the local resources. Deer, elk, salmon, fresh water mussel, and hazelnut are among the food items found in the excavated fill of the shelter. Pestles found in Upper Shelter suggest that other vegetal foods may also have been gathered and prepared in hopper or stone bowl mortars not found during the test excavations. Bone tools recovered at the site indicate that meat was not the only product hunted animals provided occupants of Upper Shelter. Antlers, bones, and hides may have all been used at the site.

Given the botanical and faunal evidence, it would seem that Upper Shelter was occupied during the late summer and early fall. Chinook, coho salmon and hazelnuts co-occur at that time of year and the water level of the river would not be so high as to discourage the collecting of *Margeretifera falcata* present at this point in the river.

The presence of obsidian in the assemblage indicates that the occupants of Upper Shelter participated in an extensive trade network, one through which obsidian may have been obtained as far away as south-central Oregon. No other obvious non-local items are present in the assemblage.

Three episodes of occupation, distinguishable by the peaks in occurrence of cultural debris, have been identified in Upper Shelter. The most recent, Component A, has two radiocarbon dates of 350 ± 60 BP and 400 ± 70 BP. The barbed and tanged projectile points recovered from this component are consistent with these Late Archaic dates. Indeed, all of the projectile points recovered during the testing of Upper Shelter are narrow-necked varieties, presumably used to tip arrows.

Though the sample of projectile points is admittedly quite small, initial observations suggested that there may be evidence for a change in point style. Tanged points are present in each of the three components, though it is only in the most recent component--Component A--that barbed points make their appearance. This observation was investigated by the use of a chi-square test applied to the contingency table formed by Table 15.2. Results indicate that the distribution of projectile point types among the three components was not signifcantly different in the Upper Shelter deposits. It should be noted that the small sample size makes this statistic unreliable and that the inferred stylistic change can only be confirmed with a larger sample from Upper Shelter or, perhaps, through the excavation of similarly stratified sites in the region.

CHAPTER 16

LOWER SHELTER INVESTIGATIONS

No surface evidence of human occupation was apparent at the spot along the sandstone outcrop to the west of the talus (Figure 11.2) where David Corliss chose to place a test pit. Suspecting a buried rockshelter was present because of the slight lipping of the outcrop at the ground surface, Corliss excavated through almost 1.7 meters of sterile alluvium before encountering cultural material (Figure 16.1).

Lower Shelter is found at the base of the outcrop and is fronted by the terrace which lies between the outcrop and the river to the south. A large Douglas fir grows at the base of the outcrop and is immediately west of the test excavations.

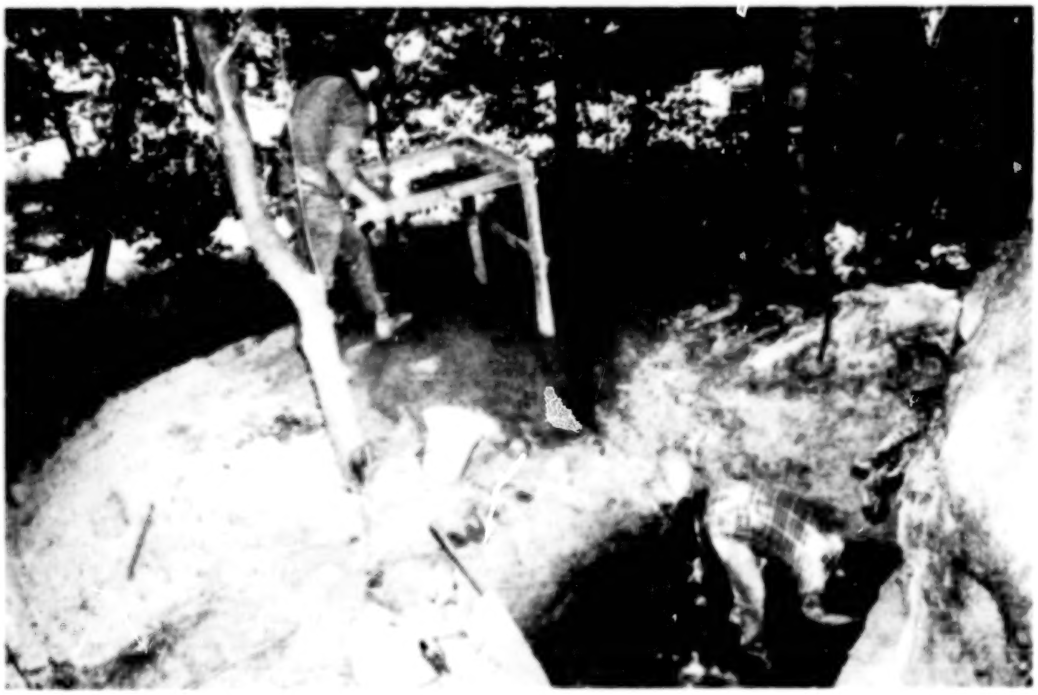

Figure 16.1. 1980 test excavations at Lower Shelter.

STRATIGRAPHY

Eleven horizons were identified by the BLM soil scientist during the 1980 test excavations. These horizons have been collapsed into four strata (Figure 16.2) and are described below.

Stratum I includes the two O horizons which are found to a depth of approximately 10 cm below the surface. These horizons comprise a neutral-to-slightly-acid (pH 6.6 - 6.4) humic zone of duff--leaves and fir needles.

Stratum II, found to a depth of approximately 40 cm below the surface, includes the two identified A horizons. Horizon A_{11} is a 15 cm thick grayish brown, fine-to-medium loam. A_{12} is a 20 cm thick coarse-to-medium, brown silt loam. These horizons have medium acid pH values of 5.8.

Stratum III, found to a depth of approximately 165 cm below the surface, is comprised of five AC horizons. AC_1 is approximately 33 cm thick and AC_5 is approximately 20 cm thick. The horizons of this stratum are characterized by yellowish brown sandy loam with pH values decreasing with depth, from a medium acid 5.8 to a strongly acid 5.4. The structure of the horizons grades from a medium subangular blocky structure in AC_1 through a very coarse subangular blocky type in AC_3, returning to a medium subangular blocky structure in AC_5.

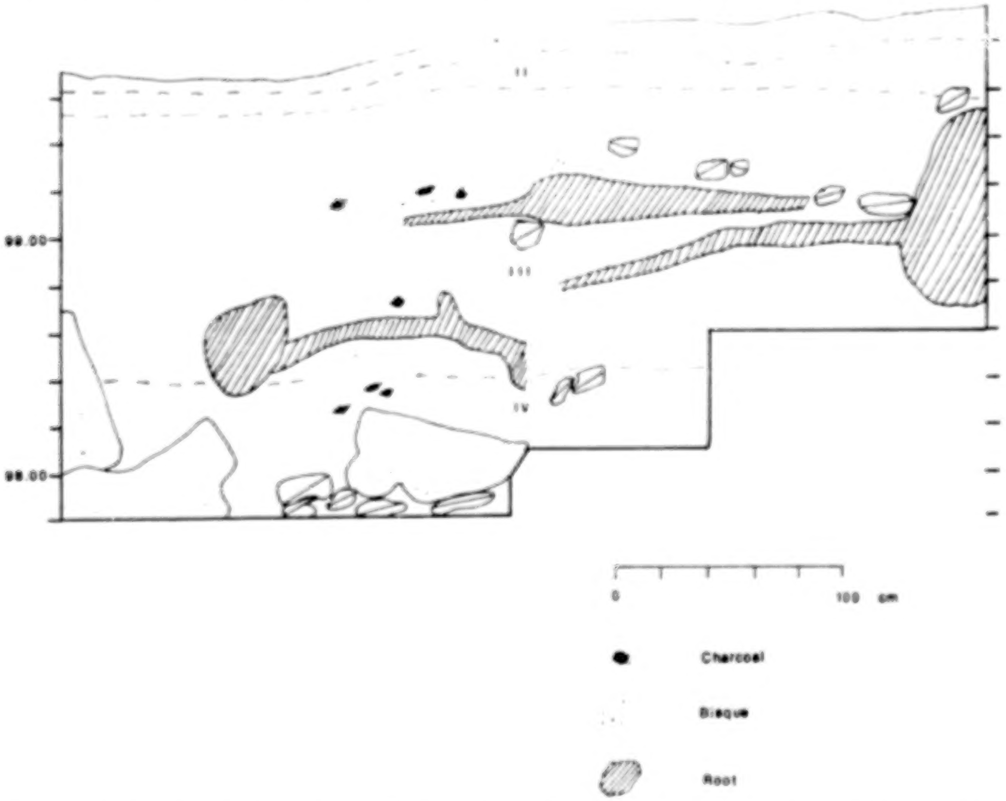

Figure 16.2. South profile of TPs E and F, showing soil strata at Lower Shelter.

Stratum IV, situated conformably below Stratum III and found to a depth of at least 225 cm below the surface, is comprised of two C horizons. Each of these is approximately 30 cm thick and classified as dark yellowish brown, fine sandy loam with weak, medium subangular blocky structure. The pH value at this depth is a strongly acid 5.4.

Large roots, obviously belonging to the mature Douglas fir to the west of the test pits, are found throughout the excavation, particularly within what are described as the AC horizons of Stratum III. Cobble-sized pieces of sandstone colluvium is not uncommon in the fill. Boulder-sized material is most common at the bottom of the excavation.

The outcrop within which Lower Shelter is found is consistent with Baldwin's description of the Tyee Formation (1981:27): sandstone rhythmically overlying a siltstone.

The soil regime at this location, with the absence of a B horizon, suggests a young soil, perhaps no older than 2000 years.

1980 EXCAVATION

The original testing of Lower Shelter included the excavation of a 2x2 meter test pit (TP-1) placed at the base of the sandstone outcrop to the west of the Upper Shelter. TP-1 was west of an indentation in the outcrop which has funneled slope-wash and colluvium onto the terrace, forming a talus and helping to obscure Lower Shelter (Figure 11.2). A Douglas fir with a circumference of approximately 5.5 m is growing adjacent to the test pit and large roots of the tree were encountered during the excavation. One root grows along the roof of Lower Shelter.

TP-1 was excavated quickly to a depth of 168 cm below the surface through sterile overburden, at which point cultural material was encountered. In order to maximize recovery, all fill was subsequently sifted through 1/4 inch hardware cloth. The excavation was reduced in area to a 1x2 meter unit consisting of the west half of the original test pit, and excavated to a depth of 258 cm "where talus or bedrock was encountered" (Corliss 1981b).

The cultural deposit reportedly began at a depth of 168 cm and continued to at least 204 cm below the surface. The entire cultural deposit was apparently contained within Stratum IV, the C horizons. Between 168 cm and 198 cm below the surface, Corliss recovered CCS and basalt flakes, a CCS endscraper, and a serrated converging base projectile point of fine-grain basalt. At a depth of 198 to 204 cm a feature "composed of flat cobbles lying on a flat surface" was exposed in the northwest corner of TP-1. Associated with this feature were "numerous chips", though neither bone nor charcoal were reported to have been collected or observed.

Below the feature and at a depth of 216 cm, a "pavement of flat sandstone cobbles" was encountered which Corliss suspected to represent rooffall. Further excavations revealed "mudstone and sandstone boulders" as well as "a few water-rounded flat cobbles at 228 cm."

Corliss' field drawings suggested that at the time of this first testing the sterile overburden had been excavated from within the rockshelter and that the "living floor" remained intact, both within the rockshelter and beyond the excavation onto the terrace. The cultural material recovered by Corliss seems to have come from just beyond (outside) the dripline of the rockshelter.

1986 EXCAVATION

Vandalism at Lower Shelter, in the form of unsanctioned excavation, prompted additional test excavations. In 1986 these consisted of two 2x2 meter test pits, TPs E and F, placed in the vicinity of where Corliss was thought to have excavated TP-1. The strategy was to rapidly excavate the overburden of strata I - III, relocate Corliss' test, and expose a larger area both within and outside of the shelter from which a greater amount of material and cultural features might be recovered.

TPs E and F were excavated in 10 cm levels with a sample of fill of each level screened through 1/4 inch hardware cloth in order to maintain control and assure ourselves that a cultural component was not accidently overlooked. Upon reaching a depth of 140 cm below the surface, all of the fill began to be screened.

Figure 16.3. Excavation of Lower Shelter.

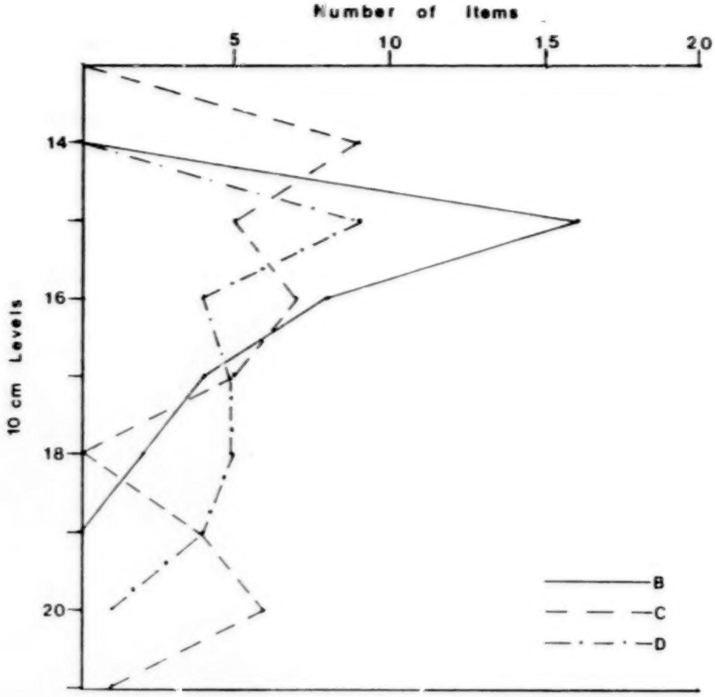

Figure 16.4. Vertical distribution of cultural material in TP-E.

The excavation of both of these test pits was hampered by large roots and boulder-sized rooffall/colluvium. Beyond approximately 130 cm below the surface, the west half of TP-F remained unexcavated due to the size of the roots (Figure 16.3). Corliss' test excavation, obscured in the upper levels by pothunting activities and compaction, was discovered by noting the presence of a linear arrangement of cut roots, styrofoam cups and a tuna fish container. At depth, the fill of TP-1 was distinguished from the surrounding fill by its marked looseness.

The cultural material recovered from TPs E and F, summarized in Tables 16.1 and 16.2, was found to begin at approximately 140 cm below the surface and extend to the bottom of the excavation at approximately 210 cm. This vertical distribution places the cultural material within the C horizons, as defined during the 1980 testing. Only one component is suggested by the distribution of material in TP-E (Figure 16.4). This component lies within Stratum IV.

Rounded, water-worn cobbles were discovered within Stratum IV and associated with flaked lithic debris and tools. However, no evidence of a feature, such as the one described by Corliss, was discovered in 1986.

Although no faunal remains were recovered from the cultural deposit of Lower Shelter, one hazelnut fragment was recovered at a depth of approximately 170 cm below the surface. One radiocarbon assay was obtained from charcoal collected at a depth of approximately 160 cm below the surface. The date returned is 420 ± 60 BP (Beta 17814).

Table 16.1 Summary of cultural material recovered from TP-E.

			Debitage			Tools			
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	Total
A	18						1		1
		0	0	0	0	0	1	0	1
B	15		10	6					16
	16		3	5					8
	17		2	1		1			4
	18		1	1					2
		0	16	13	0	1	0	0	30
C	14		5	4					9
	15		2	3					5
	16		4	3					7
	17		1	3			1		5
	18								0
	19		1	2		1			4
	20		3	2			1		6
	21						1		1
		0	16	17	0	1	3	0	37
D	15		1	6		1	1		9
	16		1	3					4
	17		1	4					5
	18		1	4					5
	19		1	3					4
	20			1					1
		0	5	21	0	1	1	0	28

The excavation was terminated on a siltstone floor which sloped south toward the river. The overhang of Lower Shelter was discovered to be shallow, no deeper than approximately 75 cm along a north-south line between TPs E and F (Figure 16.5).

Table 16.2. Summary of cultural material recovered from TP-F.

		Debitage			Tools				
Quad	Level	OBS	CCS	BAS	OBS	CCS	BAS	OTH	Total
C	10			1					1
		0	0	1	0	0	0	0	1
D	14		3	1					4
	15			3					3
	16		1	2					3
	17		1	1			1		3
		0	5	7	0	0	1	0	13

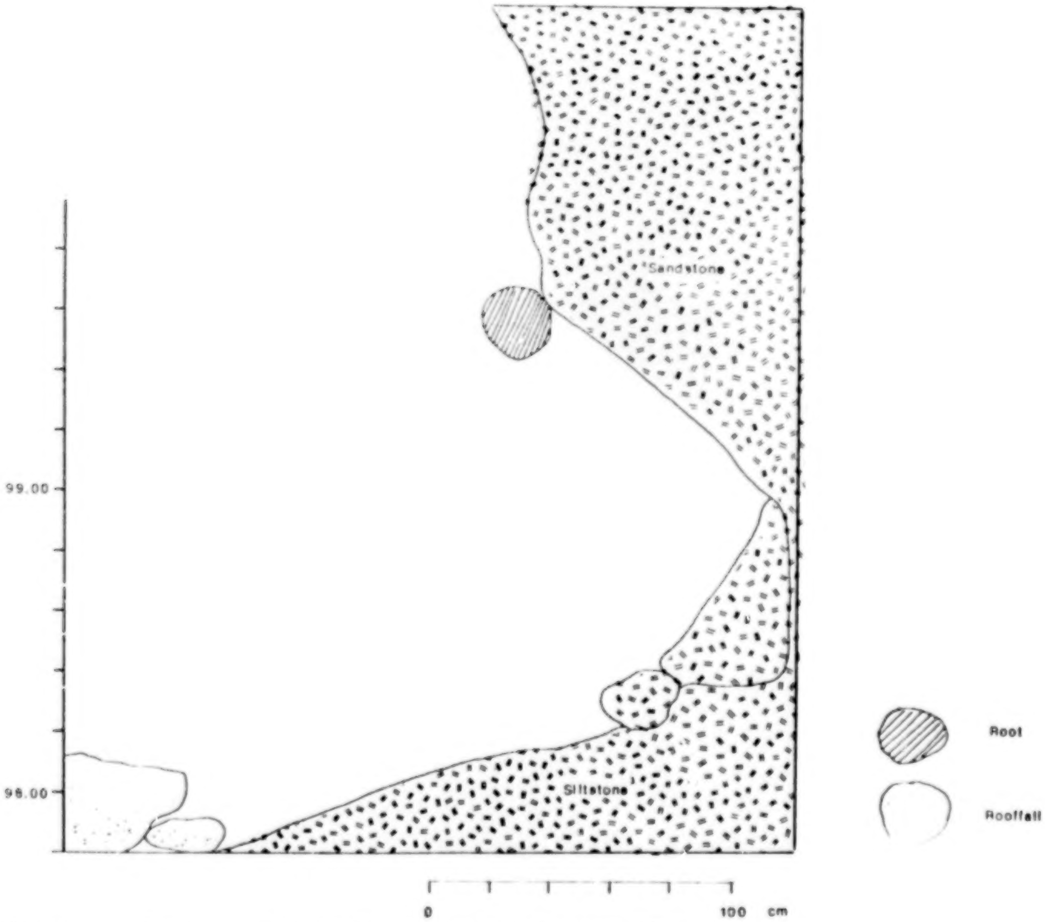

Figure 16.5. Profile of Lower Shelter between TPs E and F.

CHAPTER 17

DESCRIPTION AND ANALYSIS OF LOWER SHELTER ARTIFACTS

Recovered from the cultural deposits of Lower Shelter were 15 tools and 153 pieces of lithic debitage (Table 17.1). The assemblage contains chipped and flaked stone tools. No ground tools, obsidian tools or obsidian waste flakes were recovered from Lower Shelter.

Table 17.1 Summary of artifacts recovered from Lower Shelter.

	Material		
	CCS	BAS	Totals
Projectile points		3	3
Bifaces	1		1
Unifaces	3	1	4
Cores	1		1
Choppers		4	4
Flaked cobbles		1	1
Hammerstone		1	1
	5	10	15
Debitage	60 (39.2)	93 (60.8)	153

TOOLS

Projectile Points

Three projectile points were recovered from Lower Shelter (Figure 17.1 and Table 17.2). Each is manufactured of basalt. Two types are represented.

V-stemmed Points

CS This type includes specimens with V-shaped bases and distal shoulder angles greater than 180 degrees. This type is compatible with Connolly's Coquille Series (1986:223, 240). (N=2)

Foliate Points

LS This type includes one specimen with a convex base and serrated blade.

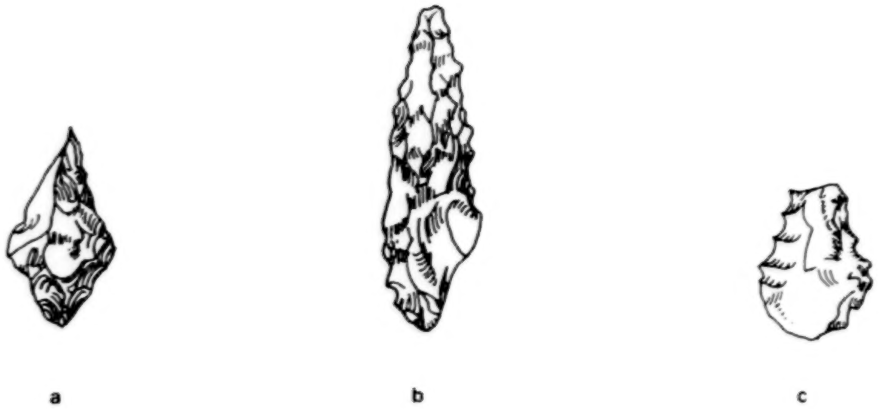

Figure 17.1. Projectile points from Lower Shelter (shown actual size).

a. 7-1 b. 97-2 c. 6-2

Table 17.2. Metric data of Lower Shelter projectile points.

Type	Specimen Number	Raw Mat'l	Max Length	Blade Width	Base Width	Thick	Prov
CS	7-1	BAS	26.6*	14.2	3.4	5.0	EC/17
CS	97-2	BAS	44.4	13.1	3.8	6.5	TP1
LS	6-2	BAS	21.0*	16.5	-	4.0	ED/15

measurements in mm; * indicates broken or incomplete specimen

It is compatible with Connolly's LS-1 (1986:224, 241) and Schreindorfer's Leaf-shaped E from the Marial Site (1985:66). (N=1)

Bifaces

One fragmentary CCS biface was collected from EB/17. Specimen 61-1 measures 21* x 9* x 4* mm and weighs 0.7 gm. This fragment appears to be a small portion of the lateral edge of a much larger tool (Figure 17.2).

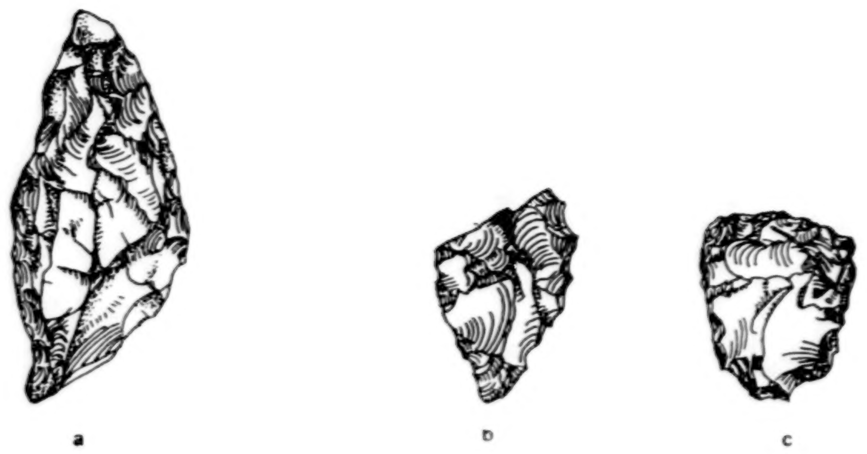

Figure 17.2. Biface (a) and unifaces (b-c) from Lower Shelter (shown actual size).
a. 107-1 b. 67-1 c. 97-1

Table 17.3. Lower Shelter uniface data.

Edge Type	Specimen Number	Raw Mat'l	Flake Size	Prov.
1	5-1	BAS	5	FD/17
3	6-1	CCS	2	ED/15
5	97-1	CCS	3	TP1
3,3	67-1	CCS	3*	EC/19

Flake Unifaces

The four unifacially worked flakes recovered from Lower Shelter (Figure 17.2) were classified in the same manner as those collected from Upper Shelter (Table 17.3). Of the unifaces collected, 75% (3) are CCS and 25% (1) is basalt. One specimen has a single concave edge (type 1), one has a single convex edge (type 3), one is an endscraper (type 5), and the fourth specimen has two convex edges (type 3,3). This last specimen, 67-1, may be the broken proximal end of a (type 5) endscraper.

Cores

One CCS core was collected from Lower Shelter. Specimen 97-3 was recovered from TP-1 at a depth of 168-192 cm below the surface. It measures 59 x 25 x 16 mm and weighs 28 gms.

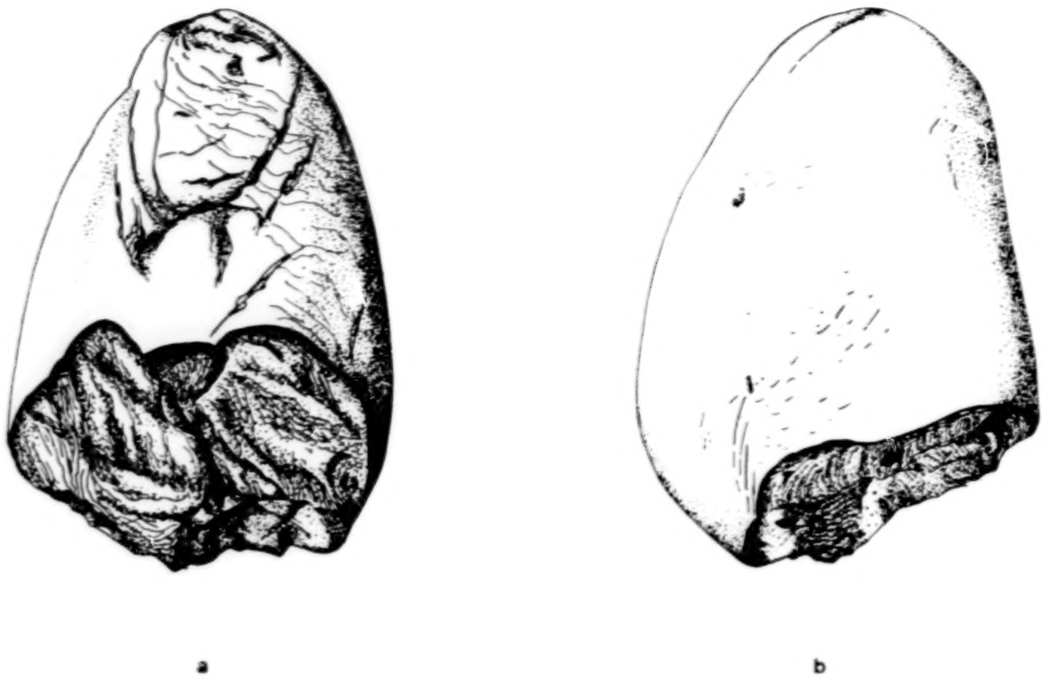

Figure 17.3. Choppers from Lower Shelter (shown 65% actual size).

a. 69-502 b. 96-2

Table 17.4. Metric data for Lower Shelter choppers.

Specimen Number	Raw Mat'l	Length	Width	Thickn's	Weight	Prov.
63-501	BAS	83*	132	57	824	EA/18
69-502	BAS	120	83	58	720	EC/20
96-2	BAS	115	85	30	395	TP1
99-1	BAS	104	73	42	365	TP1

measurements in mm; * indicates broken specimen

Choppers

Four unifacially flaked basalt cobbles were collected from Lower Shelter (Table 17.4). This is the most common type of cobble tool found in the cultural deposit of the shelter (Figure 17.3).

Table 17.5. Lower Shelter flake types.

	Flake Types				
	P	S	I	D	Totals
CCS	3 (5.0)	3 (5.0)	37 (61.7)	17 (28.3)	60
BAS	11 (11.8)	29 (31.1)	43 (46.2)	10 (10.7)	93
	14 (9.1)	32 (20.9)	80 (52.3)	27 (17.6)	153

Key: P=primary flake; S=secondary flake; I=interior; D=debris
n/(%)

Flaked Cobbles

One basalt specimen, 98-1, was collected from TP-1 at a depth of 204 cm below the surface. It measures 139 x 80 x 27 mm and weighs 457 gm. Like other specimens of this class, it is a minimally modified water-rounded cobble.

Hammerstone

One basalt hammerstone was collected. It shows minimal use at an end. Specimen 71-501, collected from EC/21, measures 148 x 63 x 48 mm and weighs 685 gm.

DEBITAGE ANALYSIS

Each of the 153 pieces of debitage collected from Lower Shelter was categorized according to its (a) material type, (b) reduction stage, (c) completeness, and (d) size. This data is comparable to that collected for the debitage of Upper Shelter.

Recognizing that the sample size is small, the interpretations accompanying the following observations are tentative at best.

Raw Material

Two raw material types are represented in the lithic debitage from Lower Shelter. Basalt is the most commonly occurring material with 60.8% (93) represented. CCS is represented by 39.2% (60) of the collection of waste flakes. Obsidian, not recorded as a locally occurring lithic resource, is not

Table 17.6 Lower Shelter debitage summary; presence/absence of platform.

	Platform			
	Present	Absent	Debris	Totals
CCS	12 (20.0)	31 (51.7)	17 (28.3)	60
BAS	24 (25.8)	59 (63.4)	10 (10.8)	93
	36	90	27	153

n/(%)

Table 17.7. Lower Shelter flake size.

	Size (cm)						
	1	2	3	4	5	>5	Totals
CCS	13 (21.7)	42 (70.0)	5 (8.3)				60
BAS	9 (9.7)	48 (51.6)	23 (24.7)	8 (8.6)	2 (2.2)	3 (3.2)	93
	22 (14.4)	90 (58.8)	28 (18.3)	8 (5.2)	2 (1.3)	3 (2.0)	153

n/(%)

represented in the Lower Shelter debitage assemblage.

The relative proportions of raw materials types for the tools from Lower Shelter are consistent with those seen for the debitage. Basalt tools account for 66.7% (10) of the assemblage and CCS tools 33.3% (5).

Flake Type

Individual debitage specimens were sorted according to their reduction stages. The four lithic reduction stage classifications used to separate the Upper Shelter debitage were used for the material from Lower Shelter.

The relative proportions of CCS flake types indicate that tool manufacture and repair were the principal uses of CCS. Furthermore, CCS seems to have been treated as a relatively scarce resource. On the other hand, with larger proportions of primary and secondary flakes, it would appear that basalt core reduction took place at Lower Shelter. It should be noted, however, that the size of the basalt tools -- cobble choppers -- would play a role in the presence of primary and secondary flakes in the assemblage. Finally, basalt appears to have been treated as the locally abundant resource that it is.

Presence/Absence of Platform

The presence or absence of a striking platform was recorded for each specimen. The majority of the flakes were broke and missing a platform, suggesting tool manufacture (Sullivan and Rozen 1985).

Debitage Size

Each piece of debitage was measured by placing it upon a grid of concentric circles measuring .5 through 8 cm in diameter. The majority of flakes recovered from Lower Shelter are of the 2 cm range (Table 17.7) with a sizeable proportion (38.7%) greater than 2 cm. This seems to indicate the easy availability of basalt and the heavy tools which were manufactured of this material.

LOWER SHELTER SUMMARY

The cultural material of Lower Shelter, consisting of 15 tools and 153 pieces of debitage, was recovered below approximately 1.5 meters of sterile alluvium and colluvium which had effectively sealed the shelter and its contents to the drip line. The soil fronting Lower Shelter has a regime suggestive of a young soil, and a radiocarbon date of 420 ± 60 BP from the depth of the cultural deposit is not inconsistent with this observation.

The artifact assemblage from Lower Shelter, which includes projectile points, flake unifaces, choppers, a hammerstone and a biface fragment, does not appear to be particularly specialized, given the amount of area tested. A hunting camp might be suggested by these tools, game being returned to the shelter for further processing. The faunal remains that might shed light on the kinds of animals exploited are absent due, no doubt in large part, to the strongly acid pH value of the soil at this depth. One charred hazelnut fragment was recovered from Lower Shelter.

The vertical distribution of cultural material in Lower Shelter does not indicate more than one cultural component.

The three projectile points recovered represent two types that are distinctly different from those tanged and barbed specimens recovered from Upper Shelter. Lower Shelter specimens include two of the V-stemmed Coquille Series type and one serrated foliate. Projectile points of these types are not inconsistent with what Connolly (1986) describes as the Glade Tradition, a long-lived technological and subsistence pattern proposed for southwest Oregon.

CHAPTER 18

SUMMARY OF THE MARTIN CREEK TESTING

Archaeological testing at the Martin Creek Site determined the presence of buried prehistoric cultural deposits within two rockshelters. Located in the Umpqua Basin on land administered by the Bureau of Land Management, the test excavations conducted in 1981 and 1986 were prompted by vandalism to these deposits.

The rockshelters of the Martin Creek Site are situated at the base of a sandstone outcrop which is fronted by an approximately 30 meter wide alluvial terrace. At the foot of the terrace flows the Umpqua River. An abandoned logging road traverses the terrace between the outcrop and river.

Recovered from the 11 meter^2 excavation of Upper Shelter were 129 tools and 1259 pieces of lithic debitage. An examination of the vertical distribution of this material, coupled with a review of the soil strata found within this shelter, indicates the presence of at least three components that are generally coterminous with the lower three soil strata.

The artifact assemblage from Upper Shelter includes projectile points, knife fragments, unifacially worked flakes, heavy choppers, spall scrapers, pestles, an abrader, and pieces of pointed and worked bone. A large quantity of faunal material was collected which was found to include deer, hare, squirrel, salmon, sucker, and fresh water mussel. Elk and squawfish are possibly represented in the faunal assemblage. Hazelnut fragments were recovered from the fill of the rockshelter.

Table 18.1. Summary of Martin Creek Site radiocarbon dates.

Date BP	Lab Number	Provenience
350 ± 60	Beta 17813	Upper Shelter, Component A (Str. III)
400 ± 70	Beta 17812	Upper Shelter, Component A (Str. III)
420 ± 60	Beta 17814	Lower Shelter, Stratum IV

The projectile points of Upper Shelter are predominately tanged and barbed specimens of the Gunther Series and are consistent with the Late Archaic period radiocarbon dates of 350 ± 60 BP and 400 ± 70 BP which date Component A, the uppermost component of Upper Shelter. Barbed projectile points similar to these have been thought to be associated with fishing (Cressman 1960), though this has yet to be proved (cf. Leonhardy 1967).

Lower Shelter, a shallow overhang which had been buried to the ceiling with alluvial and colluvial fill, was tested by means of 10 meter^2. Two square meters, representing Corliss' 1980 test, were re-excavated during the 1986 season. Large roots and boulder-size pieces of rooffall precluded substantial testing of this rockshelter.

The artifact assemblage recovered from Lower Shelter includes projectile points, flake unifaces, choppers, a hammerstone, and a biface fragment. No faunal remains were collected from the strongly acid soil. One hazelnut fragment was recovered and a radiocarbon assay on charcoal recovered from the cultural deposit returned a date of 420 ± 60 BP.

The projectile point assemblages of the two rockshelters form mutually exclusive sets. The three projectile points of Lower Shelter include two V-stemmed Coquille Series specimens and one convex-base serrated foliate. Neither of these two types is present in the Upper Shelter assemblage. Furthermore, no barbed or tanged specimens--ubiquitous in the Upper Shelter deposits--were found in Lower Shelter. This exclusivity would appear to represent the presence of two cultural patterns which may be accounted for by Connolly's (1986) culture-historical treatment of archaeological data from southwest Oregon. An average linkage cluster analysis which includes, among other point types, the Coquille Series and serrated foliates, graphically illustrates their association with like assemblages of what Connolly terms the Glade Tradition (1986:100). The Glade Tradition spans the Middle and Late Archaic periods with dates as recent as 300 years ago (cf. Pettigrew and Lebow 1987).

The projectile point assemblage of components comprising the Late Archaic period Siskiyou Pattern, dated to the last 1500 years in southwest Oregon, include small side-notched points as well as narrow-necked and barbed varieties (Connolly 1986:120). Projectile points of the Gunther Series have been found in radiocarbon dated contexts in the Umpqua Basin . At the Narrows Site they are found in Component I with radiocarbon dates of 90 ± 70, 140 ± 60, 320 ± 50 and 330 ± 80 BP. One Gunther Barbed point was recovered at Limpy Rock Shelter in association with Desert Side-notched and narrow-necked points and a date of 430 ± 60 BP (Baxter 1987). At South Umpqua Falls Rockshelter #1, Gunther Series projectile points were recovered from the upper portion of the cultural deposit (Minor 1987). A date of 600 ± 50 BP is perhaps a maximum date for this type at South Umpqua Falls. It should be noted that V-stemmed points--Minor's type 6--occur stratigraphically below these barbed specimens (Minor 1983:16-17).

If the radiocarbon date from Lower Shelter accurately reflects the age of the cultural deposits that were found there, the significance of the Martin Creek Site would be its potential for addressing questions dealing with culture change and/or replacement, and assessing the appropriateness of Connolly's culture-historical scheme for interpreting Umpqua Basin prehistory.

In sum, the assemblage from Lower Shelter indicates that tool manufacturing and repair took place at the time of its use. It was probably periodically used by groups of hunters, as suggested by the projectile points. Given the tool assemblage and associated faunal and macrobotanical remains, Upper Shelter would seem to represent a late summer-to-early fall occupation of the rockshelter by small groups of people who exploited the local animal and vegetal resources. Riverine resources of salmon and mussel were not overlooked in this subsistence regime and are well represented in the archaeological record of Upper Shelter. Although not substantiated by the test excavations, it is not unlikely that a lean-to was constructed in front of the outcrop to provide additional protection from the elements.

The significance of the "mutually exclusive" projectile point assemblages of Upper and Lower Shelters at the Martin Creek Site is investigated in greater detail in Part IV.

PART IV

CULTURAL CHRONOLOGY
AND
SUMMARY

CHAPTER 19

TOWARD AN UMPQUA BASIN CHRONOLOGY

> Building cultural chronology is neither outdated nor old-fashioned. In fact, the overall success of regional archaeology depends, in large measure, on the strength of the underlying chronologies and typologies (Thomas 1986:619).

Chronology is one of the most basic questions facing archaeologists in their investigations of a region. Without an understanding of the time period in which a site was occupied, broader processual questions (eg., settlement patterns, subsistence strategies, inter- and intra-regional patterns of trade, in situ cultural change, population replacement) cannot be adequately addressed. Archaeologists rely on temporally sensitive artifacts, those the morphology of which changes over time, to construct cultural chronologies. Dates for the prehistoric periods within these chronologies are assigned by using radiocarbon assays of organic material found in association with these stylistically distinct artifacts. Seriation of collections may be undertaken to determine their relative chronological position within the prehistoric sequence. In southwest Oregon, projectile points represent the class of artifact found to be most useful in defining cultural periods.

In this chapter, a set of thirteen middle and upper Umpqua Basin projectile point assemblages are compared, followed by a 21-assemblage comparison that encorporates not only the original set but also a series of numerically smaller assemblages. Together, these assemblages represent components from fifteen archaeological sites. The projectile points have been classified according to a scheme employed by Connolly (1986) for comparing southwest Oregon and northwest California assemblages. Guided by radiocarbon dates, cluster analysis and seriation, the assemblages may be divided into three temporally significant groups.

Before presenting the analysis, a brief review of chronologies previously applied in the area is introduced.

LOCAL AND REGIONAL CHRONOLOGIES

The only Umpqua Basin-specific chronology proposed to date is that of Honey and Hogg (1980:58-66). In general, however, the only excavated Umpqua Basin materials used in their study were those recovered from test excavations in the Steamboat Creek area (Brauner and Honey 1977) located in the North Umpqua drainage of the upper Umpqua Basin. Except for these limited local data, the researchers relied upon chronological information generated from investiga-

Table 19.1 Summary of Honey and Hogg's Umpqua Basin cultural chronology.

Time Interval	Period Description
AD 500 - AD 1800	Ethnographic present
1500 BC - 500 BC	Athapaskan intrusion
2500 BC - AD 1600	Coastal adaptations
2500 BC - AD 1600	Upland hunting adaptations; later phases
3000 BC - 1500 BC	Lower riverine adaptations
6000 BC - 2000 BC	Upland hunting adaptations; early phases
14000 - 7000 BC	Earliest human penetration and occupation

tions in the adjacent Rogue and Willamette basins and the more distant Columbia Plateau. Furthermore, they employed notions of population movements (e.g. Jacobs 1937; Cressman 1960) which described the coastward march of people along westward flowing rivers. At the time that Honey and Hogg proposed their cultural chronology for the Umpqua Basin, only one radiocarbon assay had been collected from any investigation in the Umpqua drainage--a 1010 BC date from the Umpqua/Eden Site at the mouth of the river. The Honey and Hogg chronology is explicitly developmental, as the descriptions of the periods indicate, and their seven periods comprise a set of expectations that span some 16,000 years (Table 19.1).

Honey and Hogg speculate that, due to its more northerly position, entry into the Umpqua Basin by groups of hunters predates that which occurred in the Rogue Basin to the south. During the early phases of the Upland Hunting Adaptation Period (6000 - 2000 BC), populations of hunters from the Columbia Plateau and northern Great Basin are said to have crossed the Cascade range into the river valleys of western Oregon. The generalized tool kit of these people would have included foliate-shaped Gold Hill type points and, later, side-notched leaf-shaped points. Subsistence pursuits are thought to have included the hunting of modern species of the Western Cascades and (though undocumented in the archaeological record) the taking of anadromous fish and gathering of a variety of edible plants and nuts.

During the later phases of the Upland Hunting Adaptation Period (2500 BC-AD 1600) Honey and Hogg speculated that more efficient methods of acquiring food were developed. The evidence they cite includes tool assemblages from the Steamboat Creek region of the North Umpqua River. The earlier assemblages contain ground stone tools, such as mortars and pestles, and triangular, stemmed projectile points. The later assemblages contain hopper mortars and barbed projectile points.

According to Honey and Hogg, while developments were underway in the uplands, people were slowly moving into and adapting to the environmental conditions to be found along the rivers of the middle and lower Umpqua Basin. This occurred during the period of Lower Riverine Adaptation which spanned a time range from 3000 to 1500 BC. An elaboration of the developments and the cultural assemblage associated with this period was lacking, in large part due to the absence of archaeological investigations in that part of the basin.

Honey and Hogg assumed that a coastal orientation occurred quite late, perhaps on the order of 2500 BC, and its development continued until approximately AD 1600. The investigations conducted by Oregon State University in the late 1970's at the Umpqua/Eden Site provided Honey and Hogg with the sole Umpqua Basin radiocarbon date available to help determine the duration of their Coastal Adaptation period.

Employing the observations of Jacobs (1937) regarding the distribution of Pacific Athapaskan populations, Honey and Hogg proposed that the intrusion of these people into the Umpqua drainage was from the east side of the Cascade Range. The entry was thought to have occurred as early as 1000 BC and to have certainly been accomplished by AD 1000. According to Honey and Hogg the significance of the Athapaskan intrusion lies in the fact that, as the last substantial immigrant group into the Umpqua Basin, their incursion would have affected the distribution and interrelationships of extant Penutian populations.

The Ethnographic Present for Honey and Hogg represents that period of time during which the lifeways of the aboriginal inhabitants can be understood by the historic accounts of early European visitors to the area. They propose that this period began approximately AD 500 and continued until AD 1800.

The cultural chronology of the Umpqua Basin offered by Honey and Hogg suffered by its lack of supportive data, a fact of which the authors were well aware. However, because it provided a scheme based upon regional assumptions of population movement and development, subsequent archaeological data could be used to evaluate the hypotheses inherent in its formulation.

Another cultural chronology, which has had more utility in the Umpqua Basin than the Honey and Hogg model, is that developed by Connolly (1986) to account for developments in southwest Oregon and northwest California (Figure 19.1). A statistical comparison of 32 cultural components from 25 archaeological sites yielded three discrete clusters which Connolly interpreted to represent three cultural patterns: the Glade Tradition, the Syskiyou Pattern, and the Gunther Pattern.

The Glade Tradition represents a regional expression of the Cascade Pattern, found throughout the Pacific Northwest, and is interpreted to span a period of 9000 to 300 years ago. Artifacts associated with components of this tradition include large side-notched and stemmed points, foliate and shouldered points, stone bowl mortars, hammer/anvil stones, edge-faceted cobbles, and fluted unifaces. Connolly interprets the sites to be temporary camps from which a hunting and collecting economy was conducted. Valley edge locations for these camps was thought to be important and suggested an orientation to terrestrial resources. To account for the synchronicity that

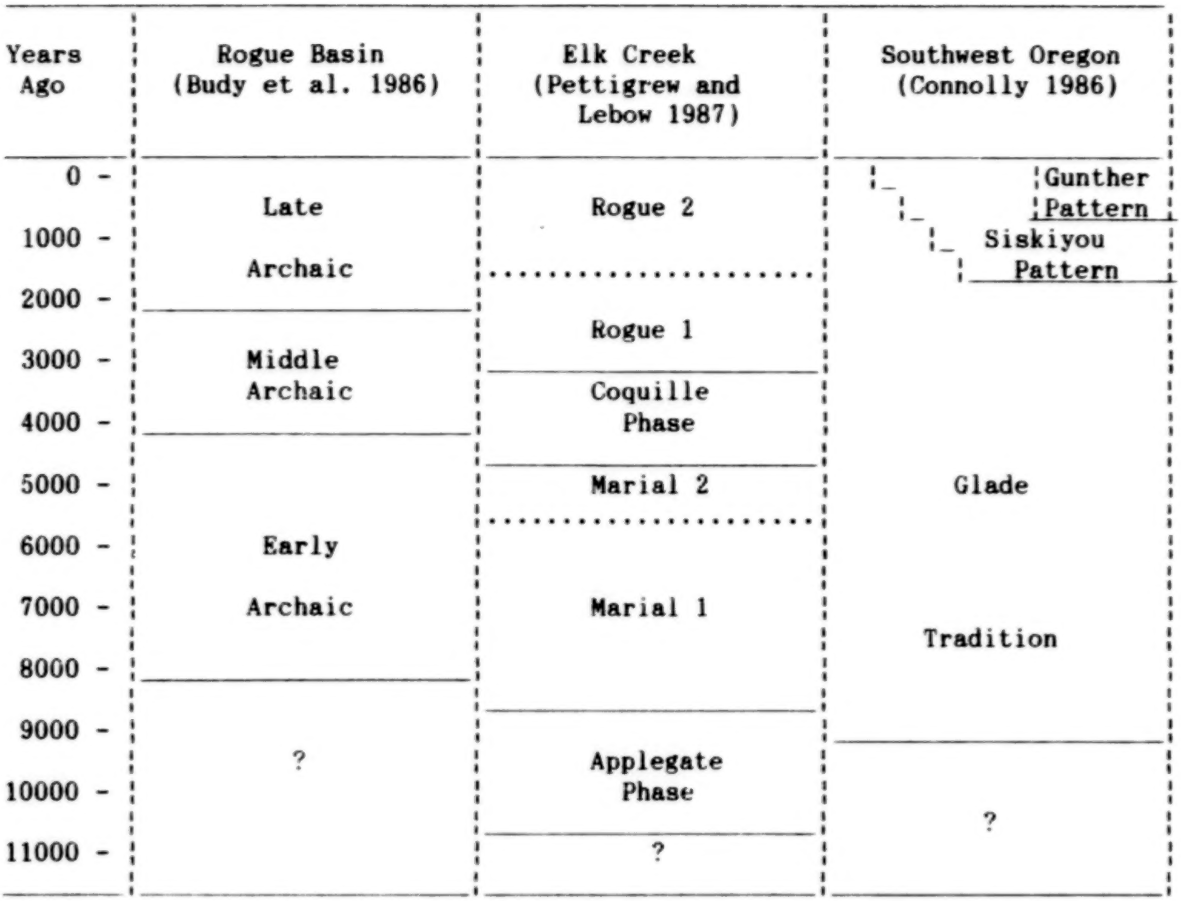

Figure 19.1. Southwest Oregon cultural chronologies.

is seen among the three cultural patterns, Connolly proposes that the Glade Tradition is inherently a conservative techno/economic pattern that persists in some regions until quite late.

Connolly proposes the Siskiyou Pattern to accommodate the Shasta and Irongate complexes of northwest California and southwest Oregon. Elements of this pattern were originally thought to have been brought westward by groups occupying lakeside sites in the northern Great Basin (cf. Connolly 1986, 1988a). Given recent work and reanalysis of data from the Lake Abert region of the northern Great Basin (Oetting 1988), Connolly now believes the Siskiyou Pattern to be an in situ development (Connolly 1988a). The appearance of this pattern in the valleys of the Klamath, Rogue and Umpqua rivers is thought to have begun approximately AD 450. Sites with circular pit houses are found along the principal rivers of the region, primarily in the inland valleys. The setting of these sites, coupled with the presence of net weights in the artifact assemblages, provides evidence suggestive of an emphasis upon fishing. Diagnostic artifacts of the Siskiyou Pattern include narrow-necked and barbed points, small side-notched points, metates, hopper mortars, and pottery.

The Gunther Pattern, a predominately coastal phenomenon, appears suddenly and full-blown approximately AD 900. Connolly attributes its sudden emergence to the immigration of Athapaskan and Algic speaking populations. Contrary to the model proposed by Honey and Hogg, Connolly suggests that these newcomers arrived by sea from some, as yet unknown, northerly point of departure. The diagnostic artifacts associated with this cultural pattern include those reflecting a strong influence from the greater Northwest Coast culture area: dentalium shell beads, bone and antler harpoon points, woodworking tools, ground stone zoomorphs, flanged and offset pestles, grooved and notched net weights, oil lamps, incised bone ornaments, ceremonial obsidian bifaces, baked clay figurines, triangular concave base harpoon points, and Gunther barbed projectile points.

Accounting for components that clustered with those of the Gunther Pattern but which did not exhibit the full range of characteristics or attributes associated with the pattern, Connolly proposed a Gunther "Sphere" into which these components might fall. Connolly hypothesizes that, along with Gunther Pattern material traits, local groups were adopting the Athapaskan language as their own because of its "prestige" position.

In Connolly's cultural chronology for southwest Oregon only one site from the Umpqua Basin is included, the South Umpqua Falls Rockshelters Site. The cultural material recovered from these two shelters, located in a region traditionally occupied by the Takelman Cow Creek Band, was separated into two temporal components. The lower component, dated between 1500 BC to AD 1400, was found to group with other components of the Glade Tradition. The upper component was found to be associated with assemblages of the Siskiyou Pattern.

Connolly's scheme has recently been reviewed in light of additional evidence. Both Minor (1987) and Pettigrew and Lebow (1987) question the validity of the Glade Tradition. It is suggested by these authors that the combining of foliate and broad-stemmed points into a single tradition obscures more refined patterns, since the two projectile point types may belong to distinctly separate periods. Minor believes that the source of the problem is Connolly's use of sites with mixed assemblages for the comparison. Pettigrew and Lebow are skeptical of the cultural origin of the radiocarbon dates obtained at the Standley Site, an Upper Coquille drainage site that figures prominently in Connolly's argument for a Glade Tradition refugium.

Pettigrew and Lebow also question the timing of the "Athapaskan intrusion" and suggest that, instead of being associated with the coastal Gunther Pattern and the diagnostic barbed points dated to approximately 1000 years ago, the migration of Athapaskan-speaking peoples into the region is coterminous with the Coquille Phase of 2500 to 250 BC. Their argument then, is not only with Connolly, but also with the glottochronological evidence, which they suggest is not accurate in this instance. This temporal phase is characterized by shouldered projectile points with V-shaped stems--classified by Connolly (1986) and Pettigrew and Lebow as the "Coquille Series"--which are apparently similar to the Rabbit Island stemmed point type discovered on the Columbia Plateau (Pettigrew and Lebow 1987:12.32-12.33).

The results of Minor's work at the South Umpqua Falls and Times Square rockshelters in the upper Umpqua Basin lead him to question Connolly's initial arguments regarding the proposed source of the Siskiyou Pattern. While Connolly argued that cultural influences generating this Late Archaic pattern were derived from displaced northern Great Basin lacustrine populations, Minor points to the antiquity of Penutian-speaking populations in southwest Oregon. Minor proposes that the changes attributed by Connolly to immigrant populations are actually the product of in situ developments among indigenous populations which, after several thousand years, were well-acquainted with the local resources (cf. Connolly 1988a).

Cultural chronologies in western Oregon (Figure 19.1) have often employed a tripartite division of the Arachaic Period: Early, Middle, and Late (e.g. Beckham et al. 1981; Budy et al. 1986). The distinguishing features are often sets of projectile point styles that imply a change in weapon system accompanying new hunting techniques: from spear, to atlatl and dart, and finally to bow and arrow.

Certain details of the foregoing chronologies are at variance with the results of the comparison of Umpqua Basin projectile point assemblages that is presented later in this chapter. On the basis of the results of this analysis, a cultural chronology designed specifically for the Umpqua Basin has been developed and is presented following a brief summary of the point typology used in the analysis.

PROJECTILE POINT TYPOLOGY

The small-scale archaeological investigations that have been conducted in the Umpqua Basin have returned a small sample of projectile points. Regardless, researchers in this area have remarked on their resemblance to morphological types described from the Rogue Basin to the south (cf. Lyman 1985). In the absence of radiometric dates, these similarities in projectile point types have, in the past, provided a guide for the assignment of Umpqua Basin components to temporal periods.

Recent attempts by various workers to develop a projectile point typology applicable to the Umpqua Basin have met with mixed success. A typology created for the assemblage recovered at the Flanagan Site (Toepel 1985), an upper Willamette Valley mound that dates from approximately 6000 years ago to recent times, has been used at several Umpqua Basin sites (Baxter and Minor 1987; Toepel and Keyser 1987; Keyser and Carlson 1987; Keyser 1987). However, it fails to distinguish regionally important diagnostic types, such as Gunther Barbed from other narrow-necked varieties (cf. Baxter 1987), and includes shouldered Coquille Series specimens in a Stemless Series category. Furthermore, the metric attributes required for its successful application have not always been provided in past Umpqua Basin reports.

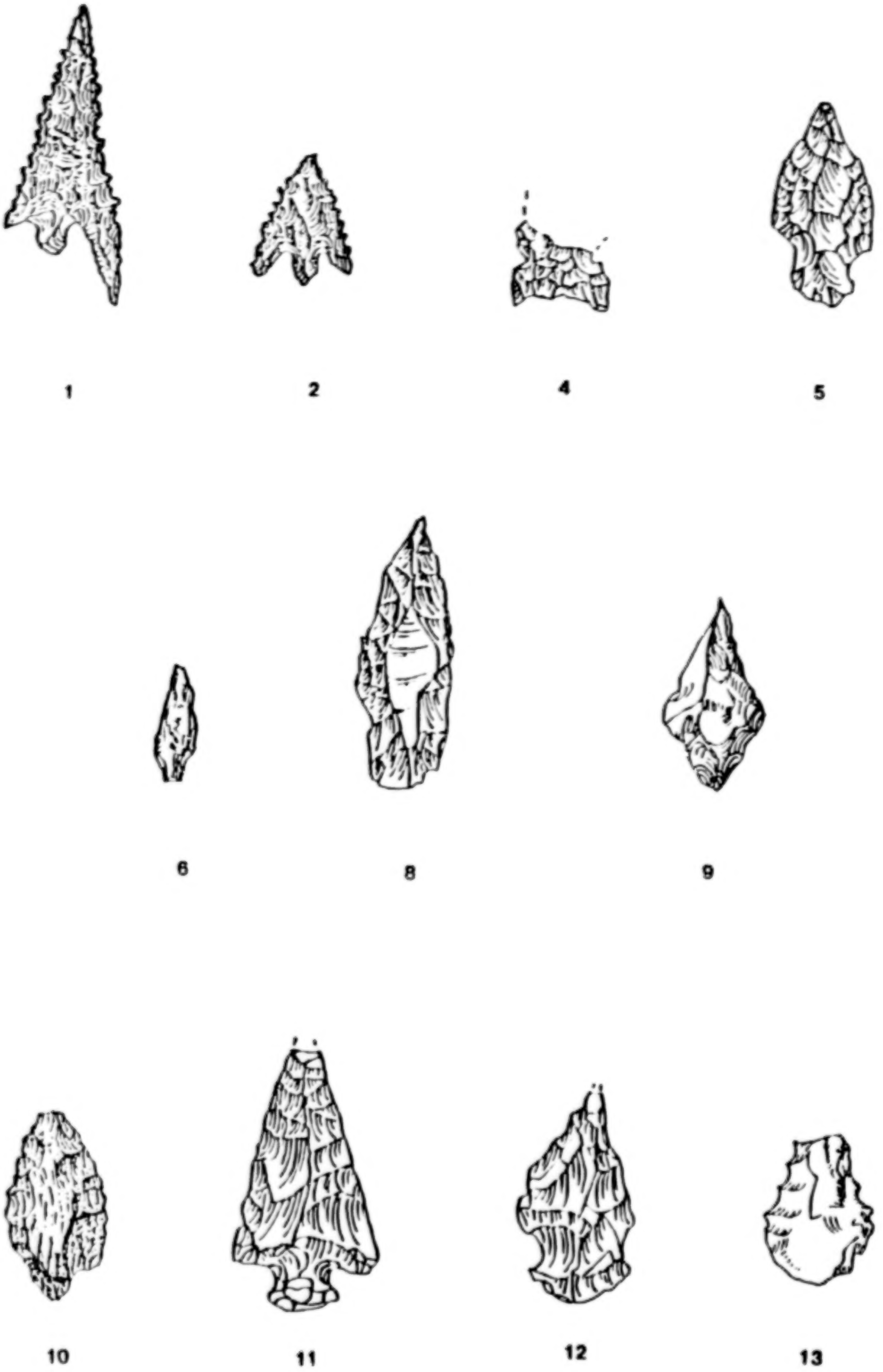

Figure 19.2. The eleven projectile point types used in the analysis employing Connolly's (1986) typology and point type numbers.

The present analysis seeks to exploit the morphological similarities observed in southwest Oregon projectile point assemblages. It is felt that the typology developed by Connolly (1986:237-241) is suitable to this purpose. Not only was it designed to account for the specific projectile point types found in the region, its design is general enough to allow for the inclusion of collections that are not rigorously described.

Of the thirteen projectile point types Connolly describes, eleven are applicable to the middle and upper Umpqua Basin assemblages analyzed for the present research (Figure 19.2). The two types not discovered in the assemblages studied include Connolly's "narrow-necked, basal-notched points with squared barbs" and "triangular, concave base points"; types 3 and 7 respectively. The latter type has been interpreted as a harpoon tip and the presence of this type at the coastal Umpqua-Eden Site in association with a maritime tool assemblage would tend to confirm this.

In the Umpqua Basin, as elsewhere when a typology has yet to be developed and agreed upon, projectile point assemblages from individual sites are subdivided in order to describe that single assemblage. The result is a set of site-specific typologies that require correlation. Table 19.2 provides a list of the projectile point types used here as well as their corresponding types at 15 Umpqua Basin archaeological sites. The following is a brief description of the types used in the present analysis.

Type 1 This type includes Gunther Barbed points, which are narrow-necked, basally notched specimens with short, contracting or straight stems. The pointed barbs exceed the length of the stem.

Type 2 Included in this type are other basally notched specimens with neck widths measuring less than 7.5 mm. This type encompasses those specimens described in the literature as Gunther Stemmed (cf. Type 11, below).

Type 4 The projectile points of this type are thin, triangular points with shallow to deeply concave bases. Shallow side-notches occur along straight blades. These are referred to in the literature as Desert Side-notched.

Type 5 This type includes other side-notched points with neck widths 8.5 mm or less. The bases of these specimens range generally from convex to straight (cf. Type 12, below).

Type 6 Specimens of this type are shouldered and have neck widths measuring less than 7.5 mm (cf. Type 8, below).

Type 8 Points of this type are characterized as being shouldered with neck widths 7.5 mm or greater. The stems of specimens of this type are generally U-shaped (cf. Type 9, below).

Type 9 The projectile points of this type are shouldered with V-shaped stems. This type, described as the Coquille Series by Connolly, was defined from the assemblage at the Standley Site in the Upper Coquille drainage.

Type 10 This type includes foliate-shaped points with unserrated edges

Table 19.2. Corresponding projectile point typologies used at 15 Umpqua Basin archaeological sites.

	POINT TYPES										
	1	2	4	5	6	8	9	10	11	12	13
Martin Creek	G-1	G-2 G-3 NN			PS		CS				LS
Narrows	G-1	G-2 NN	SN-1	SN-2		BS-2	V-1 V-2	F-1 F-2	CN BS-1	SN-2 SN-3	
Shivigny		Tanged			NN		V	F	CN		SF
Grubbe Ranch		CN						F			
Svimon Valley School	GS	GT CN		SN				GH		SN	
Glide Ranger Station		1C				1A 1B			3	2	
Limpy Rock Shelter	CE	NN	DSN								
Reynolds Creek								1	4	3	2
South Umpqua Falls		2 3	1				6	7	8	5	
Crispen Ranch		NN-2			NN-2		NN-2 NN-3 NB-3 HB-3			MB-2	
Times Square Shelter	NN-3	NN-3	NN-1							HB-2	
Hughes 1 Shelter		N-2 N-3						LS	MB-2 MB-3		
Canton Creek	01A 01B		06A			05A 05B	03B 04A	03C 04C		02A	04B
Bogus Creek									CN	SN	
Horseshoe #6								BP	CN		

(cf. Type 13, below).

Type 11 Points of this type are barbed and have neck widths measuring 7.5 mm or greater (cf. types 1 and 2, above).

Type 12 This type includes side-notched points with neck widths greater than 8.5 mm (cf. Type 5, above).

Type 13 The projectile points of this type are foliate-shaped with serrated edges (cf. Type 10, above).

THE ASSEMBLAGES USED IN THE ANALYSIS

In this analysis, 13 middle and upper Umpqua Basin assemblages from eleven sites are first compared (Table 19.3), then 21 assemblages from fifteen sites are compared. The selection of these 21 particular artifact assemblages was based upon several factors, including (a) the number of typeable projectile points found in the individual collections, (b) the availability of radiocarbon dates for the assemblages, and (c) the completeness of the documentation of the assemblages. In some cases, such as with the four cultural components discovered at the Narrows Site, small components were combined with others from the same site to form larger assemblages (i.e. "Upper" and "Lower"). In other cases, such as with the materials from the Canton Creek Site, division of site assemblages into "Upper" and "Lower" components was not possible because the reports did not provide that kind of detailed distributional information. Provided below are brief descriptions of the 15 sites used in the comparison of artifact assemblages (Figure 19.3).

The Martin Creek Site, described in detail in Section III of this report, is a pair of rockshelters located in the middle Umpqua Basin along the main stem of the Umpqua River. The upper shelter contains cultural material that may be separated into three occupational episodes, the projectile point assemblages of which are dominated by tanged and barbed varieties (types 1 and 2). Radiocarbon assays date the uppermost occupation to approximately 375 years ago. The lower shelter contains a small artifact assemblage which includes Coquille Series specimens (type 9) and a serrated foliate (type 13). While a radiocarbon date of 420 ± 60 BP might seem too recent for the material of this lower shelter, it is in agreement with Connolly's chronology.

The Narrows Site, described in detail in Section II of this report, is a multicomponent occupation of an aboriginal fishery on the North Umpqua River. Four occupational episodes were defined on the basis of the vertical distribution of cultural material. For the purposes of the initial comparison of fifteen assemblages, components I and II are here combined as an "Upper" occupation and components III and IV combined to form a "Lower" occupation. The projectile point inventory of the Upper Component is dominated by barbed and tanged varieties; types 1 and 2 of Connolly's typology. Other artifacts include knives, scrapers, choppers, edge faceted cobbles, stone bowl and hopper mortars, pestles, worked bone, and a baked clay figurine fragment. Dates from this Upper Component range from 90 to 1020 years ago. A variety of projectile point types are found in the assemblage of the Lower Component, perhaps indicating some mixing of the cultural deposits with those from above. The majority of the projectile points, however, are broad-necked and include types 8, 11, and 12. Radiocarbon dates from the Lower Component include a 5090 BP date and a 6270 BP date.

The Grubbe Ranch Site is an undated assemblage of chipped and ground stone tools that includes projectile points, stone bowl and hopper mortars, pestles, and choppers from vertically stratified cultural deposits along the North Umpqua River in the middle Umpqua Basin (O'Neill 1989a).

Table 19.3 Summary of Umpqua Basin assemblages used in the analysis.

---

13 Assemblages

* Martin Creek (Upper)
* Narrows (Upper)
* Narrows (Lower)
Sylmon Valley School
Glide Ranger Station
* Limpy Rock Shelter
Shivigny East
South Umpqua Falls (Upper)
* South Umpqua Falls (Lower)
* Crispen Ranch
* Times Square Rockshelter
* Hughes I Rockshelter
Canton Creek

21 Assemblages

* Martin Creek (Upper)
* Martin Creek (Lower)
* Narrows I
* Narrows II
* Narrows III
* Narrows IV
Sylmon Valley School
Glide Ranger Station
* Limpy Rock Shelter
* Reynolds Creek
Shivigny East
South Umpqua Falls (Upper)
* South Umpqua Falls (Lower)
* Crispen Ranch (Upper)
Crispen Ranch (Lower)
* Times Square Rockshelter
* Hughes I Rockshelter
Canton Creek
Bogus Creek
Horseshoe #6
Grubbe Ranch

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* Radiocarbon dates are associated with these assemblages.

The Shivigny East Site is a dense scatter of chipped stone tools and debitage located on a ridge crest overlooking the North Umpqua River in the upper Umpqua Basin (O'Neill 1988a). A variety of projectile points were recovered and included types 2, 6, 9, 10, 11, and 13.

The Sylmon Valley School Site is situated on the South Umpqua River in the middle Umpqua Basin (Lyman 1985). In addition to a set of projectile points, the artifact assemblage includes scrapers, knives, choppers, and net weights. A feature presumed to be an earth oven was discovered. It consisted of a concentration of water-rounded cobbles and fire-cracked rock in a matrix of fire-blackened earth measuring approximately 1 meter in diameter. No botanical remains were found associated with this oven.

The Glide Ranger Station Site is located in the middle Umpqua Basin at the confluence of the North Umpqua River and Little River (Churchill and Jenkins 1985). An extensive site situated on the north and south banks of the Umpqua, it contains vertically stratified cultural deposits which include chipped and ground stone tools and a projectile point assemblage dominated by broad-necked/stemmed varieties. The site remains undated.

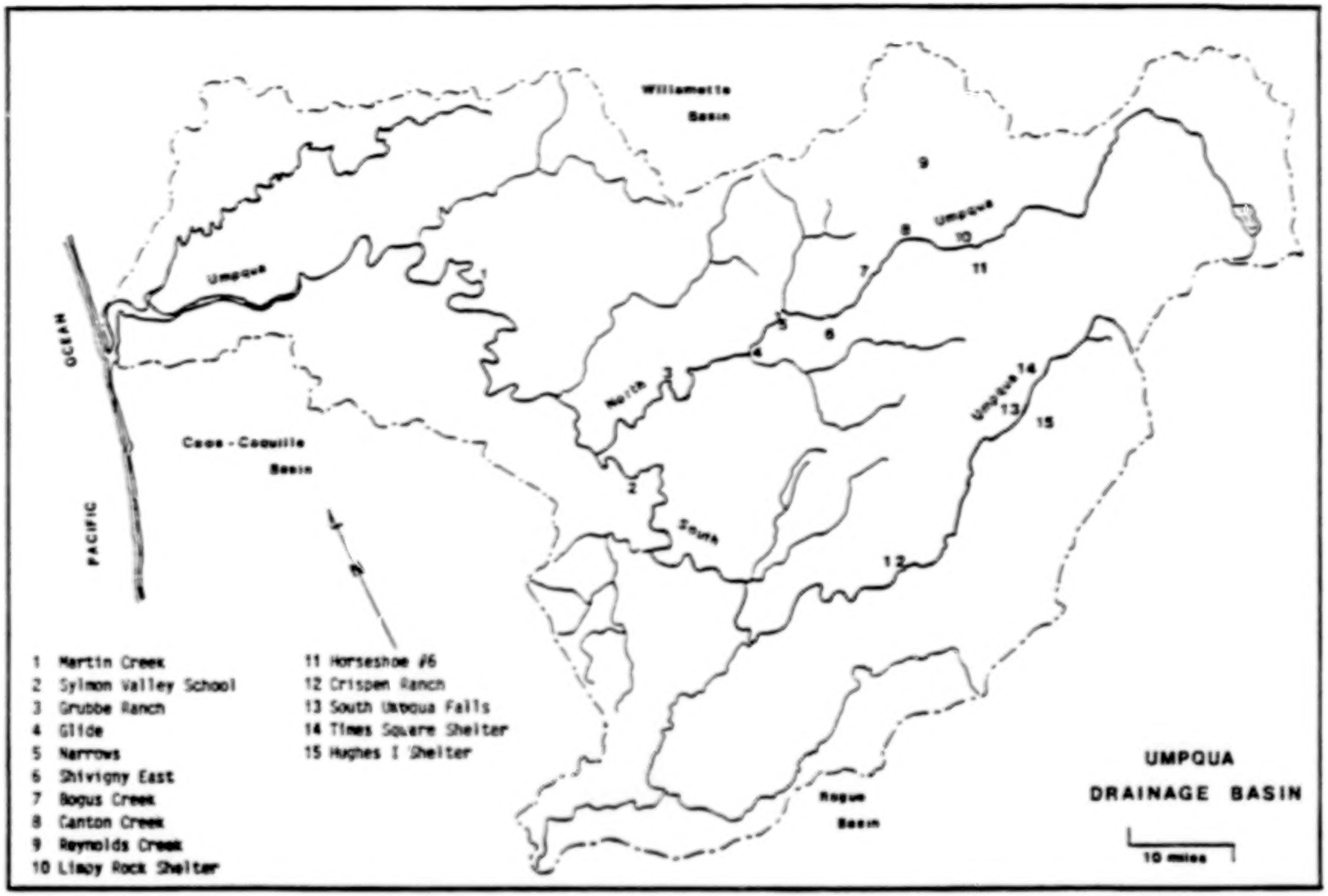

Figure 19.3. Location of the archaeological sites used in the comparison.

The Crispen Ranch Site is situated on the South Umpqua River in the middle Umpqua Basin. The cultural deposits found at this site may be divided into Upper and Lower components. The earliest component includes projectile points of the broad-necked/side-notched and Coquille Series types. Those of the Upper Component, the base of which is radiocarbon dated to 620 ± 60 BP, include the narrow-necked types 2 and 6, and Coquille Series specimens. Other artifacts recovered include knives, scrapers, drills, choppers, grinding stones and edge-faceted cobbles. The variety of tools and presence of ground stone artifacts lends support to the ethnographic information that this site was employed as a winter village (Baxter and Minor 1987). In the present analysis, the two components have been combined for the initial comparison of distinguishable clusters due to the low frequency of projectile points. These components are again separated in the later comparison of 21 assemblages.

The South Umpqua Falls Rockshelters are located above a natural impediment to the migration of anadromous fish in the upper Umpqua Basin. The Upper and Lower components used in this analysis were described by Connolly (1986:65-67). The Upper Component consists of the cultural material recovered from Stratum I of the Lower Shelter and includes tanged (type 2) and Desert Side-notched (type 4) points as well as Coquille Series (type 9) specimens. The Lower Component consists of the cultural material from Stratum II of the Lower Shelter, where a radiocarbon date of 600 ± 50 BP was recovered, and all of the Upper Shelter, where a radiocarbon assay of 3190 ± 50 BP was recovered near the bottom of the deposit. The Lower Component projectile point assemblage is dominated by foliate-shaped and broad-necked/stemmed specimens.

The Times Square Rockshelter is located on a tributary of the South Umpqua River in the upper Umpqua Basin. A radiocarbon assay of 2690 ± 60 BP associated with a broad-necked projectile point (type 12) possibly indicates the initial occupation of the rockshelter. It apparently continued to be intermittently occupied until historic time, as evidenced by the presence of a copper tube and a glass bead. The remains of a wooden lean-to were present at the mouth of the shelter. Projectile points of this later period of occupation include Gunther Barbed, Desert Side-notched, and other narrow-necked corner-notched specimens (types 1, 4 and 2). Perhaps the most remarkable aspect of this site is the presence of cordage, fiber bundles, folded and tied leaves, and spliced wooden artifacts (Minor and Connolly 1987).

The Hughes I Rockshelter is located above a tributary of the South Umpqua River in the upper Umpqua Basin (Keyser and Carlson 1987). The upper levels contain narrow-necked corner-notched projectile points associated with a radiocarbon date of 1025 ± 110 BP. The lower levels are dominated by foliate-shaped and broad-necked stemmed points (types 10 and 12). Other artifacts recovered from the cultural deposits include knives, scrapers, a mano and grinding slab. The vast majority of the faunal remains are deer.

The Limpy Rock Shelter, located in the upper North Umpqua drainage (Baxter 1987), contains dense cultural deposits representing an occupation beginning approximately 430 years ago. The artifact assemblage contains a large number of projectile points dominated by types 2 and 4. Also included in the assemblage are knives, scrapers, grinding slabs and a hopper mortar base.

Table 19.4. Setting and location of 13 Umpqua Basin assemblages.

	Site Setting		
Site Location	Open	Rockshelter	Total
Middle Basin	5 (38%)	1 (8%)	6 (46%)
Upper Basin	2 (15%)	5 (38%)	7 (54%)
Total	7 (54%)	6 (46%)	13

The Reynolds Creek Site is situated on stream terraces above Steamboat Creek in the North Umpqua drainage of the upper Umpqua Basin (Churchill 1986). Among the artifacts recovered are scrapers, knives and projectile points. The latter include serrated and unserrated foliates, and broad-necked stemmed and side-notched varieties. A radiocarbon assay from the middle of the cultural deposit returned a date of 2800 ± 60 BP.

The Canton Creek Site, also located on terraces above Steamboat Creek, was found to be a multicomponent site consisting of a dense lithic scatter of debitage and chipped stone tools. The upper component contained small, basal-notched points and only rare occurrences of stemmed and side-notched specimens. The lower component was dominated by stemmed and side-notched varieties (Brauner and Honey 1977:22-23).

The Bogus Creek Site is located at the confluence of Bogus Creek and the North Umpqua River in the upper Umpqua Basin (Winthrop 1989). The artifact assemblage includes scrapers, knives, and projectile points--all of which are either broad-necked or broad-stemmed (types 11 and 12). Obsidian sourcing conducted on a set of artifacts determined the most common source of this type of lithic raw material to be the Silver Lake/Sycan Marsh source in south central Oregon. Hydration analysis suggested an intermittent occupation between 6000 to 600 years ago (Winthrop 1989).

The Horseshoe #6 Site is an undated, dense lithic scatter located in the upper Umpqua Basin. A depression discovered during the testing of this site is interpreted as a house pit. The artifact assemblage includes knives, scrapers, and projectile points the majority of which are broad-necked stemmed specimens (Spencer 1987).

In general, the projectile point assemblages from these tested sites are small. None in this analysis numbers more than 34 typeable specimens, the average being approximately 17.

Of the 13 assemblages, 46% (6) are located in the lowland valleys of the middle Umpqua Basin and 54% (7) are located in the forested mountains of the upper basin. In terms of drainage location, one site is situated upon the main stem of the Umpqua and the remaining twelve are evenly divided between the North and South Umpqua drainages.

The assemblages may be further characterized by noting the type of site from which they were recovered. Seven of the assemblages are from "open" or exposed sites on river terraces or ridges, six are from the protected environs of rockshelters. Table 19.4 presents the distribution of the assemblages by setting and location.

ORDERING AND GROUPING THE ASSEMBLAGES

In order to discover patterns of association in the 13 Umpqua Basin assemblages chosen for the analysis (Table 19.5), two investigative tools were employed: seriation and cluster analysis.

In general, seriation is the placing of elements into a linear order reflecting similarity as well as dissimilarity. In this case, an assemblage of a seriated group of assemblages that is most like another assemblage will appear in closer proximity to it than to an assemblage with which it is less similar. Archaeologists seriate collections or assemblages with the anticipation that the results will reflect temporal ordering. To this end, variables that might produce spurious results (e.g. functional differences between sites; spatial differences) are held to a minimum. Where the law of superposition alone will answer the question of which assemblage occurred first, seriation may be a redundant exercise or assume the place of corroborative evidence. It is often the case, however, that stratigraphy will not fully explicate the situation. Not all sites contain cultural horizons separated by a sterile horizon, and stratigraphic units are not necessarily spatially uninterrupted even within small areas. There are also processes of redeposition that can on occasion invert original stratigraphy.

One of the basic notions underlying seriation is that artifact types have what amounts to a life of their own. Ontogeny is reflected in the archaeological record and by exploiting this observation the temporal ordering of assemblages is made possible. Ford (1972) provides an explicit method to be used in the search for lenticular "battleship" curves based on percentage of each type in each collection. Using Ford's method and guided by the stratigraphic position of assemblages at individual sites and the radiocarbon dates associated with assemblages, a set of "battleship curves" was constructed based on the Umpqua Basin data (Figure 19.4).

The general order of the projectile points, with broad-necked varieties to the left and narrow-necked varieties to the right, is based in part upon the pattern observed in western Oregon; the former associated with the Middle Archaic and the latter with the Late Archaic Period. The undated Canton Creek and Sylmon Valley School sites fall most comfortably between radiocarbon dated sites of the latter part of the Late Archaic Period. The undated asemblages

Table 19.5. Frequency of 11 projectile point types used for comparison in 13 Umpqua Basin archaeological assemblages.

	Point Types											
	1	2	4	5	6	8	9	10	11	12	13	Total
Martin Creek (U)	5	14			2							21
Narrows (U)	9	7	5				2	2	1	5		31
Narrows (L)	1	2		1				1	5	3		13
Sylmon Valley School	2	7		1				3		1		14
Glide Ranger Station		1				4			2	2		9
Limpy Rock Shelter	1	22	11									34
Shivigny East		1			2		2	1	1		2	9
South Umpqua Falls (U)		4	1				3					8
South Umpqua Falls (L)		4					4	5	1	3		17
Crispen Ranch		4			1		9			2		16
Times Square Rockshelter	5	4	2							1		12
Hughes I Rockshelter		6						2	7			15
Canton Creek	10		1			3	3	3		4	1	25
Totals	33	76	20	2	5	7	23	17	17	21	3	226

Projectile point types follow Connolly (1986): 1. Gunther Barbed; 2. Narrow-necked, barbed (Gunther Stemmed); 4. Desert Side-notched; 5. Other small side-notched; 6. Narrow-necked, shouldered; 8. Broad-necked, shouldered, U-shaped stem; 9. Coquille Series; 10. Unserrated Foliate; 11. Broad-necked, stemmed; 12. Broad-necked, side-notched; 13. Serrated foliate.

of the Shivigny East and Glide Ranger Station sites lie between components with Middle Archaic Period dates. Of the 11 projectile point types, four are minimally represented (types 13, 5, 8 and 6), and five seem to form discrete groups (types 11, 9, 2, 4 and 1).

The fact that mixed assemblages occur among those investigated is reflected in the results of the seriation. Three projectile point types (10, 12, 2) occur throughout the entire temporal range represented. One of these, the foliate-shaped Type 10, has been shown to be a long-lived type in western Oregon (Connolly and Baxter 1986). However, neither the broad-necked/side-notched Type 12 nor the narrow-necked/barbed Type 2 have been shown to have such a long temporal span. To account for their occurrence it should be remarked that the Canton Creek and Hughes I Rockshelter sites were thought to be multicomponent by their excavators, while excavated evidence showed that the occurrence of narrow-necked projectile points (types 5, 2 and 1) in the Lower Component at the Narrows Site is the result of mixing.

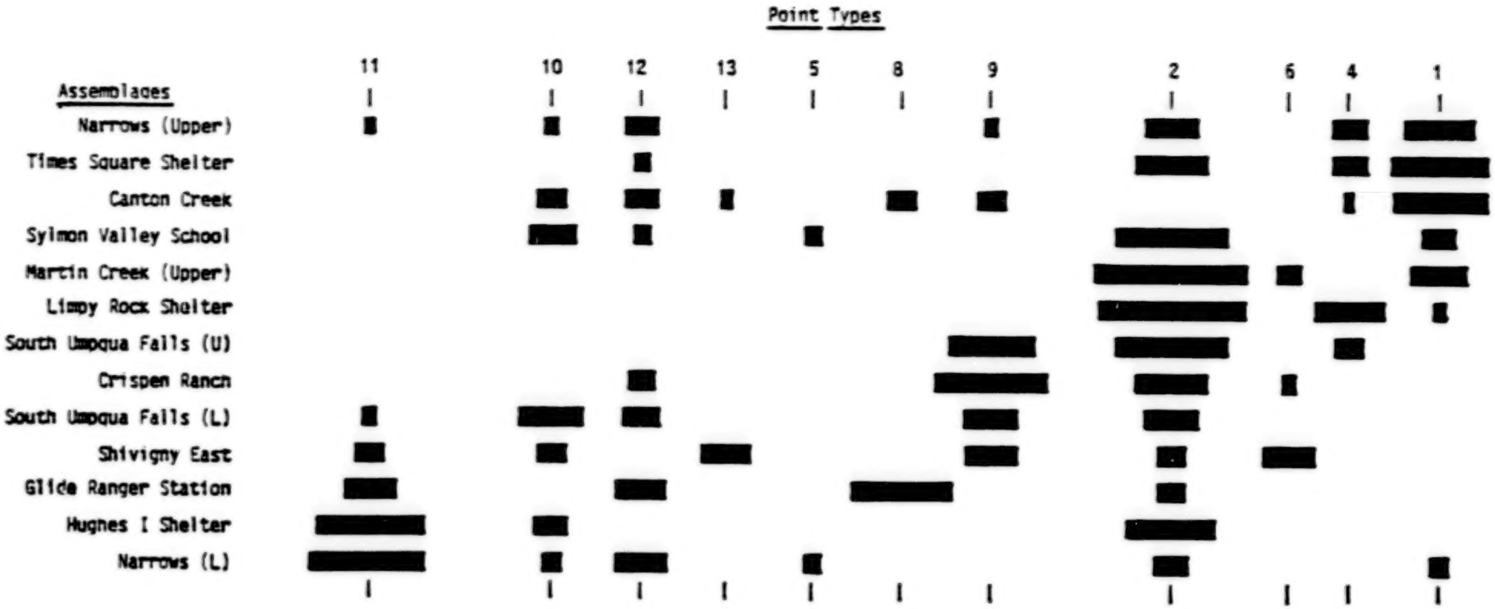

Figure 19.4. Seriation of 13 Umpqua Basin assemblages.

Table 19.6. Ordered Q-mode matrix of Robinson Index similarity scores for 13 Umpqua Basin assemblages based on the relative frequency of 11 projectile point types.

	MCU	LRS	SVS	NaU	TSS	CaC	UPU	Crk	UPL	ShE	NaL	HIS	GRS
Martin Creek (Upper)	-	135	128	94	113	47	98	77	46	42	45	79	22
Limpy Rock Shelter	135	-	107	85	106	14	125	66	47	23	36	80	23
Sylmon Valley School	128	107	-	102	109	67	100	67	104	46	91	107	38
Narrows (Upper)	94	85	102	-	153	123	84	65	108	54	97	65	62
Times Square Shelter	113	106	109	153	-	104	91	66	63	23	62	66	39
Canton Creek	47	14	67	123	104	-	41	24	79	55	64	24	57
S. Umpqua Falls (Upper)	98	125	100	84	91	41	-	141	94	66	29	79	22
Crispen Ranch	77	66	67	65	66	24	141	-	107	101	52	88	45
S. Umpqua Falls (Lower)	46	47	104	108	63	79	94	107	-	100	93	85	76
Shivigny East	42	23	46	54	23	55	66	101	100	-	61	67	46
Narrows (Lower)	45	36	91	97	62	64	29	52	93	61	-	122	111
Hughes I Rockshelter	79	80	107	65	66	24	79	88	85	67	122	-	67
Glide Ranger Station	22	23	38	62	39	57	22	45	76	46	111	67	-

The same set of data was used in a Q-mode and R-mode average linkage cluster analysis using the Robinson index of agreement. According to Johnson (1968), the ordering of the assemblages that results from the forming of clusters in this manner does not necessarily reflect a temporal ordering. Rather, it attempts to demonstrate relative similarity of collections, one to the other. It is left to the researcher to explain or interpret the significance of the clusters in the archaeological record. A Q-mode analysis provides insight into how site assemblages cluster. An R-mode analysis--to be described later--is undertaken in order to provide insight into how artifact types cluster (Dumond 1974). In this case, the R-mode analysis uses the projectile point types themselves.

In order to derive these clusters, the Robinson Similarity Matrix (Robinson 1951) was constructed using the frequency data found in Table 19.5. The similarity scores provide for a comparison of pairs of assemblages, with identity equaling 200. The greater the similarity the higher the score. The matrix of Table 19.6 has been hand-ordered, higher scores clustering about the diagonal and lower scores found along the margins. In order to generate dendrograms, the assemblages are linked by the average linkage method described by Johnson (1968).

The dendrogram of Figure 19.5, which illustrates the average linkage cluster of assemblages (Q-mode), indicates that the 13 projectile point collections can be best viewed as a set of three groups. While temporality is not claimed for cluster analysis, the assemblage clusters do seem to fall into three age groups.

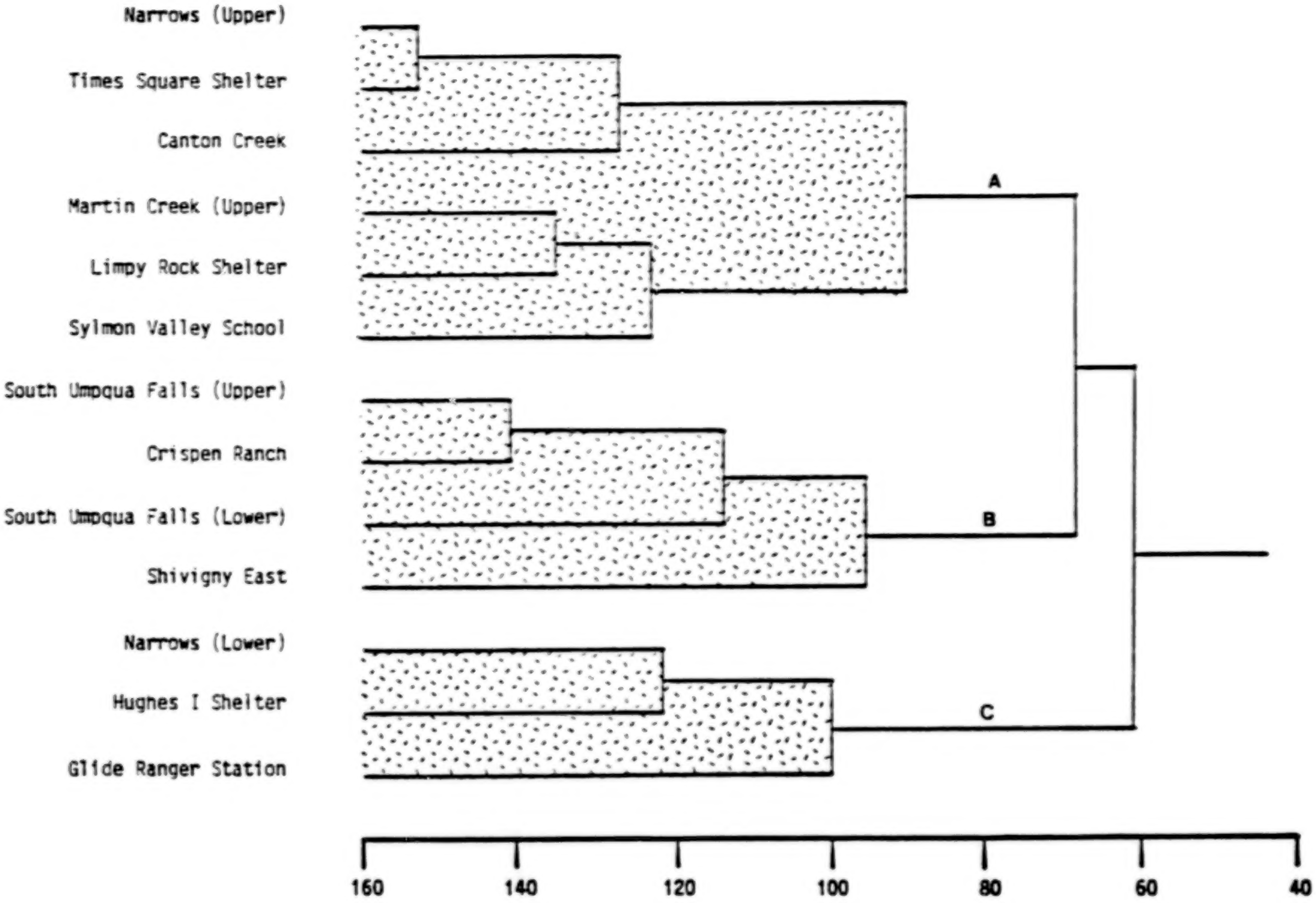

Figure 19.5. Average linkage cluster of 13 Umpqua Basin projectile point assemblages.

Group A assemblages include the upper components at the Narrows and Martin Creek sites, the Times Square and Limpy Rock shelters, Canton and Sylmon Valley School sites. These assemblages characteristically contain late style projectile points including Gunther Barbed and Stemmed points (1 and 2), and Desert Side-notched (4) points. They also contain foliate and broad-necked/side-notched specimens (10 and 12). Excluding the radiocarbon assay of 2690 BP from the Times Square Shelter, which dates a small collection of broad-necked points, the radiocarbon dates associated with assemblages of Group A range from 1020 to 90 years ago, with an average age of approximately 390 years ago. Only one of the six assemblages, Times Square Shelter, is located in the South Umpqua drainage.

Group B assemblages include the upper and lower components at the South Umpqua Falls Shelters, and the Crispen Ranch and Shivigny East sites. The projectile point types associated with this group include Gunther Stemmed and Coquille Series (2 and 9) points. Also found in these assemblages are broad-necked/stemmed, foliate, and broad-necked/side-notched (11, 10 and 12) projectile points. Two radiocarbon assays of approximately 600 BP and one of 3190 BP date the assemblages of Group B. Of the four assemblages in Group B, three are found in the South Umpqua drainage and one, the Shivigny East Site, is located in the North Umpqua drainage.

Group C assemblages include the lower components of the Narrows Site, and the collections from the Glide Ranger Station and Hughes I Rockshelter. The projectile points that dominate the assemblages of this group are broad-necked varieties (types 11, 12 and 8). Foliate and narrow-necked specimens also occur in the collections. Radiocarbon assays associated with the assemblages of Group C include the 1025 BP date from the Hughes I Rockshelter, and the 5090 BP and 6270 BP dates from the Narrows Site.

In order to capitalize on these results and to investigate the robustness of the scheme, five more assemblages were added to the analysis. Where appropriate, the original assemblages were split into smaller analytical units (Table 19.7). This reconfiguration of the data resulted in the comparison of 21 projectile point assemblages from 15 different sites. The size of the collections range from a low of only two specimens (Narrows IV) to a high of 34 specimens (Limpy Rock Shelter). Fully 47% (10) of the assemblages number fewer than ten specimens. As may be seen in the dendrogram which illustrates the average linkage cluster of these 21 assemblages (Figure 19.6), the original pattern observed in the analysis of the 13 Umpqua Basin assemblages is maintained. The radiocarbon dates associated with these groups are presented in Figure 19.7.

Group A continues to be dominated by North Umpqua drainage assemblages radiocarbon dated to no earlier than AD 1520. The Grubbe Ranch Site is added to this group and of the upper components at the Narrows Site, only Narrows I is included here.

Group B, likewise, continues to be dominated by South Umpqua drainage assemblages. The upper and lower components of both the Crispen Ranch Site and the South Umpqua Falls Rockshelters are included among these assemblages. The small projectile point assemblage from Lower Shelter at the Martin Creek

Table 19.7. Frequency of 11 projectile point types used for comparison in 21 Umpqua Basin components.

	Point Types										
	1	2	4	5	6	8	9	10	11	12	13	Total
Martin Creek (U)	5	14			2							21
Martin Creek (L)							2				1	3
Narrows I	9	6	4				2	1		2		24
Narrows II		1	1					1	1	3		7
Narrows III	1	2		1					5	2		11
Narrows IV								1		1		2
Svimon Valley School	2	7		1				3		1		14
Glide Ranger Station		1				4			2	2		9
Limpy Rock Shelter	1	22	11									34
Reynolds Creek								1	1	2	1	5
Shivigny East		1			2		2	1	1		2	9
S. Umpqua Falls (U)		4	1				3					8
S. Umpqua Falls (L)		4					4	5	1	3		17
Crispen Ranch (U)		4			1		6					11
Crispen Ranch (L)		2					3			2		7
Times Square Shelter	5	4	2							1		12
Hughes I Shelter		6						2	7			15
Canton Creek	10		1			3	3	3		4	1	25
Bogus Creek									2	15		17
Horseshoe #6								1	8			9
Grubbe Ranch		1						3				4
Total	33	79	20	2	5	7	25	22	28	38	5	264

Site, which consists of two Coquille Series projectile points and a serrated foliate, is included in Group B.

To Group C are added three assemblages dominated by broad-necked projectile points: Bogus Creek, Reynolds Creek, and Horseshoe #6. One of these, the Reynolds Site, contains a Middle Archaic Period radiocarbon date of 2800 BP.

The R-mode analysis of the data set employed in the comparison of the 13 assemblages reveals the pattern in which the projectile point types co-occur. R-mode analysis makes use of normalized collections. The dendrogram of Figure 19.8, which illustrates the average linkage cluster of the projectile point types, shows that these types may be separated into three groups.

Group I includes types generally considered to be late period projectile points (types 1, 2 and 4) as well as the long-lived foliate-shaped type 10.

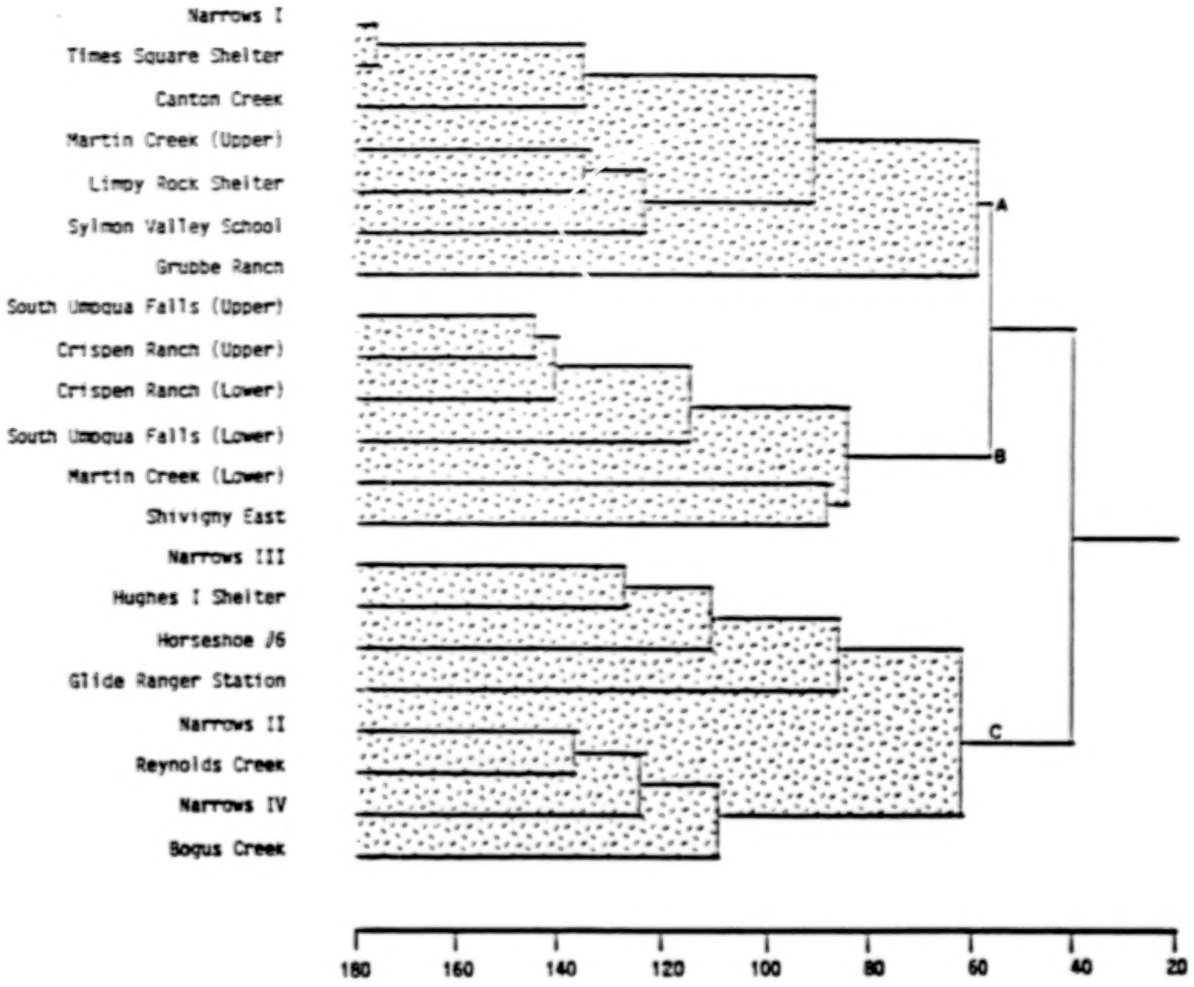

Figure 19.6. Average linkage cluster of 21 Umpqua Basin projectile point assemblages.

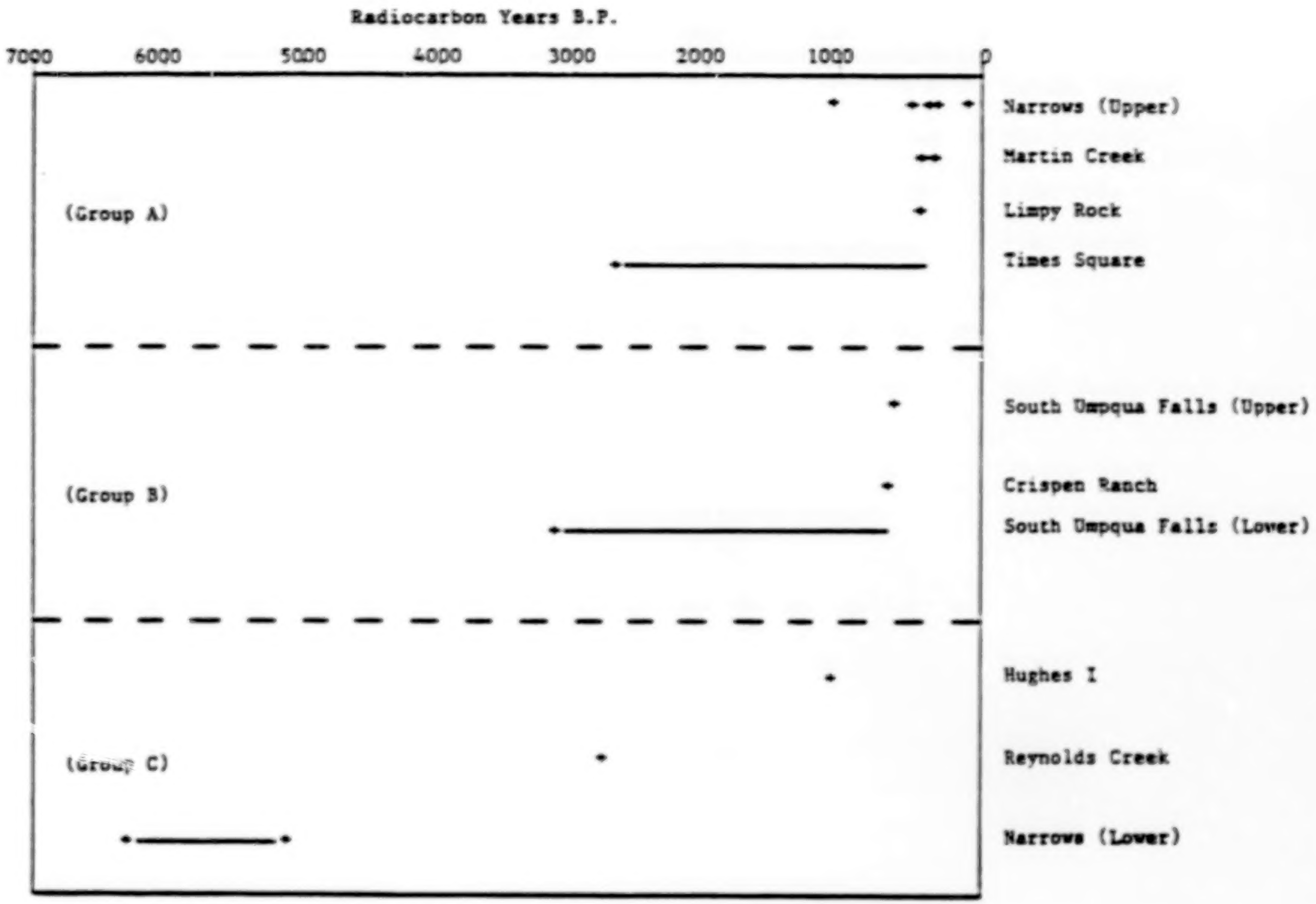

Figure 19.7. Radiocarbon dates and the three Umpqua Basin groups identified by projectile point assemblages.

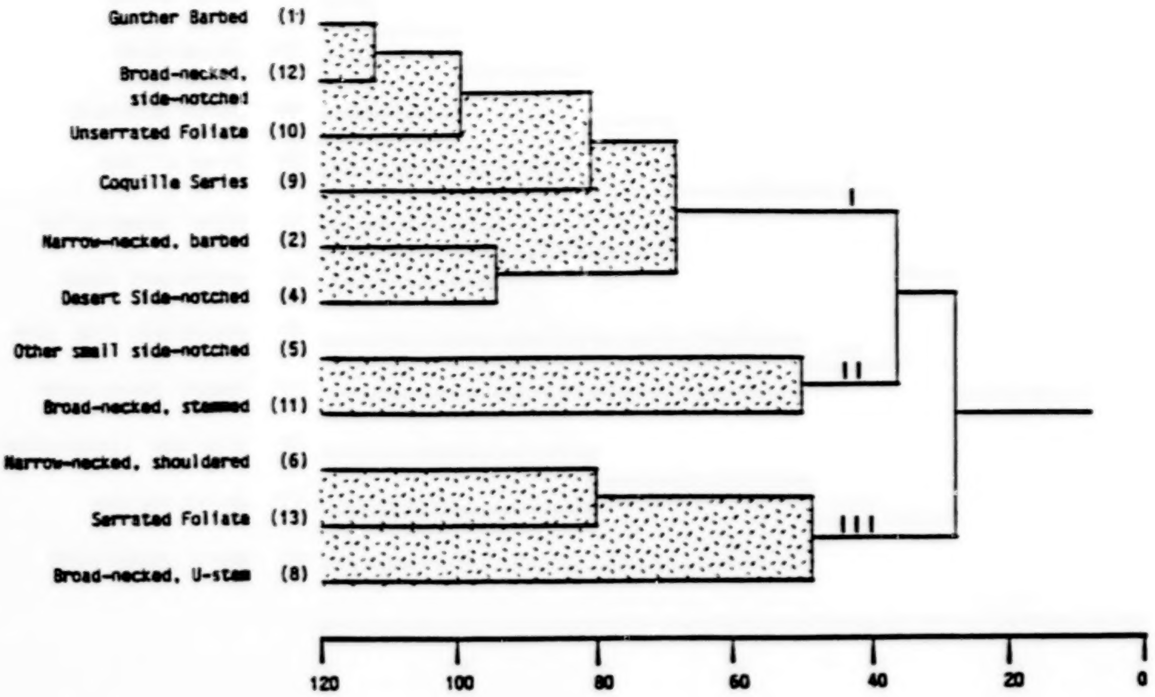

Figure 19.8. R-mode average linkage cluster of 11 projectile point types.

The Coquille Series type 9 is found in Group I. Figure 19.8 also demonstrates the surprisingly close relationship that broad-necked/side-notched points (12) have with Gunther Barbed (1) in these assemblages. This is undoubtedly a result of the mixed assemblages that are being compared.

Group II includes broad-necked/stemmed (11) and, unaccountably, the narrow-necked type 5 side-notched point.

Group III includes types 6, 13, and 8. The clustering of these three projectile point types is probably due to their low frequency; their rank order is 8, 9 and 10.

The foregoing analyses have demonstrated that Umpqua Basin projectile point assemblages form three temporally distinct groups. As will be shown below, there is some indication that two of these groups also have a spatial dimension.

CULTURAL PERIODS IN THE UMPQUA BASIN

Middle Archaic Period

In the above analysis, Group C contains assemblages with radiocarbon dates assignable to the Middle Archaic Period. In western Oregon, depending upon the interpreter, this period begins either 6000 (Beckham et al. 1981) or 4000 years ago (Budy et al. 1986) and lasts until the appearance of narrow-necked projectile points approximately 2000 years ago. In the Umpqua Basin this period began at least 6300 years ago.

During the Middle Archaic, the middle and upper Umpqua basins were inhabited by groups of people who occupied sites in areas suitable for the exploitation of local terrestrial and riverine resources. Settings include mountain benches (e.g. Horseshoe #6), rockshelters (e.g. Hughes I), and river terraces (e.g. Narrows and Glide Ranger Station). The ethnographic pattern of seasonal shift in residence to accommodate the appearance of different resources would seem to have some antiquity. The dependence upon anadromous fish, if site setting is an indicator, would also seem to be a long-lived tradition in the Umpqua Basin.

Extra-basin contact during the Middle Archaic is indicated by the presence of obsidian tools and debitage in the assemblages of this period. Sourcing of obsidian from the Bogus Creek Site, in the upper North Umpqua basin, reveals that the Silver Lake/Sycan Marsh source of south central Oregon was the origin of most of this material at this time (Winthrop 1989).

The Marial and Coquille phases described by Pettigrew and Lebow (1987) for the Elk Creek drainage of the Rogue Basin encompass the time interval represented by the assemblages of Group C. The Marial Phase (6500 -2500 BC) is characterized by assemblages containing relatively large proportions of leaf-shaped and broad-necked/diverging stem points. The latter point type might be subsumed in either of Connolly's type 11 or 12. Assemblages of the Coquille Phase (2500 -250 BC), on the other hand, are dominated by projectile points of the Coquille Series (type 9) which are not characteristic of Group C. Rather, this projectile point type is more commonly associated with the assemblages of Group B, which date between 1240 BC and AD 1350.

The Glade Tradition, as described by Connolly (1986), includes not only the temporal range of the Middle Archaic but, in places, a good portion of the Late Archaic Period as well. For Connolly's scheme to be verified in the Umpqua Basin, we would logically expect a single cluster that included the assemblages of Group C and Group B. Assemblages of this hypothesized Glade Tradition Group would contain significant proportions of broad-stemmed and Coquille Series points. Instead, Group C, with its broad-stemmed points, is distinguished from Group B by the presence of Coquille Series and Gunther Stemmed points in the latter. The terrestrial orientation proposed by Connolly for occupations of the Glade Tradition does not seem to be replicated in the Umpqua Basin assemblages of the same time period.

Late Archaic Period

Assemblage clusters A and B represent partly contemporaneous but geographically separable phases of the Late Archaic in the Umpqua Basin. These phases are here labeled the Narrows Phase and Falls Phase, respectively, and seem to account not only for the temporal-spatial clustering of the archaeological assemblages but also the presence during the ethographic period of two distinct cultural groups within the basin.

Assemblages of the Falls Phase generally occur in the upper South Umpqua drainage and, while they are associated with radiocarbon dates no later than 600 years ago, sites such as South Umpqua Falls Rockshelters and Crispen Ranch apparently continued to be occupied by Native Americans until quite late, perhaps into historic time (Minor 1987; Baxter and Minor 1987). Investigations conducted at the South Umpqua Falls Rockshelters Site (Minor 1983, 1987) give this phase its name.

There is some evidence that the Falls Phase was at one time a basin-wide Late Archaic expression. The Coquille Series projectile point type which is characteristic of this phase is found in assemblages, perhaps temporally mixed, in the North Umpqua drainage (e.g. Canton Creek). The most provocative evidence comes from the Martin Creek Site in which the Lower Shelter contains diagnostic cultural material distinctly different from that of the Upper Shelter. The projectile points of the Lower Shelter cluster with other Falls Phase assemblages, whereas the projectile points of the Upper Shelter cluster with Narrows Phase assemblages. One radiocarbon assay of 420 BP from the Lower Shelter and two assays of 350 BP and 400 BP from the Upper Shelter suggest that rapid replacement of one group by another occurred at the Martin Creek Site.

While ethnic identification of archaeological groups is a chancey undertaking, it should be noted that the distribution of assemblages of the Falls Phase is coterminous with the territorial range of the Takelman (Penutian) Cow Creek Band (Beckham 1986). This observation would appear to run afoul of Pettigrew and Lebow's assertion (1987) that the Coquille Series projectile point is to be identified with an Athapaskan intrusion into this region at about 2500 BC. It seems reasonable to accept the interpretation provided by Minor (1987) that there was a slow, but persistent, *in situ* cultural change in this region and that the Penutian populations identified at the time of contact had an ancient claim to this territory.

A riverine orientation is interpreted from the location of the Falls Phase assemblages. The region immediately surrounding the Crispen Ranch Site, a probable winter village with a radiocarbon date of approximately 620 BP, also served--during ethnographic times--as "a location used for harvesting and processing of freshwater mussels and lampreys, a trout and salmon fishery, and a salt lick" (Baxter and Minor 1987:42). The South Umpqua Falls, below the rockshelters, has been known as a very productive fishery. Faunal remains recovered from Falls Phase assemblages indicate that a broad range of large and small mammals were hunted and trapped, with black-tailed deer providing a significant proportion of the meat diet (cf. Morejohn 1987).

Mortuary customs during the Falls Phase included flexed burial in shallow pits (Minor 1987). The Tyee Burial located on the main stem of the Umpqua River, with radiocarbon dates of 500 and 470 years ago, included grave goods consisting of a spatulate-shaped, ground slate club which had been broken prior to interment (O'Neill 1987).

During the Falls Phase there was continued extra-basin contact, as evidenced by the occurrence of obsidian in the archaeological deposits of this phase. There is no indication of a significant interruption of this trade during this phase (cf. Pettigrew and Lebow 1987) and sourcing studies in the Umpqua Basin do not suggest a change in source over time.

Results of archaeological investigations at the Narrows Site provide the name for the assemblages of Group A. The Narrows Phase is radiocarbon dated no earlier than 430 years ago and assemblages of this phase are generally found along the main stem of the Umpqua and in the North Umpqua River drainage. These assemblages characteristically contain Gunther Barbed type projectile points. The geographic distribution of the Narrows Phase assemblages closely approximates that of the attributed territorial range of the Athapaskan-speaking Upper Umpqua at the time of contact.

Subsistence pursuits undertaken during the Narrows Phase appear comparable to those of the Falls Phase, with riverside winter villages situated in locations of multi-resource availability. Riverine resources, which included anadromous fish and freshwater mussels, were exploited. Ground stone tools and possible oven features at Narrows Phase sites provide archaeological evidence of the importance of vegetable foods. Mortuary practices included the placing of remains in shallow, basin-shaped pits such as was discovered in Component I at the Narrows Site. These details help corroborate the ethnographic data available for the native peoples of the Umpqua Basin.

SUMMARY OF ANALYSIS AND CULTURAL CHRONOLOGY

Against a backdrop of cultural chronologies offered for the Umpqua Basin (Honey and Hogg 1980) and southwest Oregon (Connolly 1986; Budy et al. 1986; Pettigrew and Lebow 1987) this chapter has presented a comparison of Umpqua Basin projectile point assemblages. The purpose of this analysis was to construct an independent cultural chronology that would account for the archaeological data recovered from prehistoric sites in the Umpqua Basin (Figure 19.9).

The projectile point typology employed for the analysis was adopted from Connolly's (1986) work with southwest Oregon and northwest California data. A seriation of 13 assemblages by projectile point type revealed the applicability of this typology for Umpqua Basin materials and confirmed the suspicion that some of these assemblages are mixed.

This set of 13 assemblages was subsequently augmented by the addition of numerically smaller components as well as the splitting of previously combined assemblages. The resulting set of assemblages numbered 21 and the cluster

Years Ago	CULTURAL PERIODS	UMPQUA BASIN CULTURAL PHASES		SOUTHWEST OREGON CULTURAL PATTERNS (Connolly 1986)	
	HISTORIC	Cow Creek (Takelman)	Upper Umpqua (Athapaskan)		
	LATE ARCHAIC	Falls Phase	Narrows Phase		Gunther Sphere
1000				Siskiyou Pattern	
2000				Glade Tradition	
3000	MIDDLE ARCHAIC	"Group C Assemblages"			
4000					
5000					
6000					
7000	EARLY ARCHAIC				
8000					
9000	PALEOINDIAN				
10000		(Fluted Points ?)			

Figure 19.9. A cultural chronology of the Umpqua Basin.

analysis performed on this set yielded identical results. Three clusters of assemblages that are interpreted to represent temporo-spatial groups were defined. One of these is a group of Middle Archaic Period components and two are associated with Late Archaic Period dates and artifacts.

The group of assemblages with the earliest radiocarbon dates, Group C, represents a Middle Archaic occupation of the middle and upper Umpqua Basin. Broad-stemmed points dominate the collections. Sites from which assemblages are derived are found in both the North and South Umpqua drainages and current data do not indicate an emphasis upon terrestrial resources, as might be assumed from local and regional chronologies.

The Falls Phase, represented by the assemblages of Group B and named for the South Umpqua Falls Rockshelters Site, is a Late Archaic occupation that until approximately 400 years ago was found basin-wide. Assemblages of this phase characteristically contain Coquille Series projectile points. The geographic distribution of recent assemblages of this phase, found in the South Umpqua drainage, potentially reflects a constricted territorial distribution of the Takelman Cow Creek Band.

Along the main stem of the Umpqua River and in the North Umpqua drainage, the Falls Phase was succeeded by the Narrows Phase, represented by the assemblages of Group A. Projectile point assemblages of the Narrows Phase typically contain Gunther Barbed specimens and are radiocarbon dated from approximately 400 years ago to historic times. The geographic distribution of assemblages of the Narrows Phase closely matches the territorial distribution of the Athapaskan Upper Umpqua and a late date of entry into the basin is consistent with most Pacific Athapaskan linguistic and archaeological studies (cf. Whistler 1979).

CHAPTER 20

SUMMARY AND CONCLUSION

Archaeological investigations in the Umpqua Basin, generally in response to federally mandated cultural resources measures, have produced a corpus of information that has heretofore gone unsynthesized. Those who have conducted test excavations in the basin have generally appealed to sources outside the basin in order to assign temporality to the cultural deposits encountered. Recent cultural chronologies developed for materials recovered in southwest Oregon (Connolly 1986; Pettigrew and Lebow 1987) have proposed that the Umpqua Basin be included in their schemes. A comparison of 21 Umpqua Basin projectile point assemblages, presented in the previous chapter, has found that these cultural chronologies cannot be applied directly to the materials of this more northerly basin. While the general cultural patterns proposed by Connolly (1986, 1988a) seem appropriate, the details which generate a "periodization of southwest Oregon prehistory" (cf. Bicchieri 1975; Connolly 1988b:69) are necessarily specific to the Umpqua Basin. The interpretations offered by Pettigrew and Lebow (1987) regarding the appearance of Athapaskan populations in southwest Oregon are not found to be appropriate for the Umpqua Basin situation.

Presented in this report have been the analyses of two archaeological sites located in the middle Umpqua Basin. These prehistoric sites, one of which is currently the oldest dated site in the basin, contain stratified, radiometrically dated assemblages. The projectile point assemblages of these sites were subsequently employed in a comparison with other Umpqua Basin sites to develop a local chronology. The clustering of the assemblages into three temporal-spatial groups is interpreted to be the result of both in situ cultural change and the appearance of a distinctly different language community on the scene.

THE ARCHAEOLOGICAL SITES

The two archaeological sites described in detail in this report provided six of the 21 projectile point assemblages used in the comparison of Umpqua Basin assemblages. The results of these investigations have been the discovery of discrete, radiocarbon-dated components that have been ordered into a local sequence spanning the past 6300 years. Presented below is a summary of those investigations.

The Narrows Site

The Narrows Site, described as an aboriginal fishery in the 1855 cadastral survey records, is situated on a terrace overlooking the North Umpqua River near the community of Idleyld in the middle Umpqua Basin. At this point the river rushes through a narrow channel, giving the location its name. Archaeological testing of the site in 1981, 1986, and 1987 yielded 597 tools and 8913 pieces of lithic debitage. The artifact assemblage includes projectile points, knives, drills, scrapers, cores, choppers, hammerstones, edge faceted cobbles, stone bowl and hopper mortars, pestles, bone tools and a fragment of a baked clay figurine. The variety of artifacts suggests the site's use as a base camp. The excavation of a portion of a house pit indicates that the site may have been, at times, permanently occupied. An analysis of the vertical distribution of cultural material, found to extend to approximately 150 cm below the surface, indicates the presence of four cultural components. Radiocarbon dated, these components represent portions of the Middle and Late Archaic periods, beginning approximately 6300 years ago.

Component I, with a series of four radiocarbon dates ranging from 90 ± 70 BP to 330 ± 80 BP, is found in a midden-like upper soil stratum. Associated with this component are barbed and tanged projectile points, bone tools, a baked clay figurine fragment, and a tightly flexed human burial found to have been buried in a basin-shaped pit. The artifact assemblage and cultural features of this component help define the Narrows Phase of the Late Archaic Period in the Umpqua Basin.

Component II is dated by two radiocarbon assays of 450 ± 70 BP and 1020 ± 60 BP. The projectile point assemblage of this component is dominated by broad-necked stemmed and side-notched specimens. It is quite possible that the two Coquille Series projectile points assigned to Component I represent a mixing of the two components and may more reasonably be associated with the materials of Component II. Only additional testing will resolve this question. Also associated with Component II are stone bowl and hopper mortars, and a partially exposed house pit. Although the cluster analysis presented in Chapter 20 places this component with Middle Archaic assemblages, given the radiocarbon dates associated with this component and the possibility of Coquille Series projectile points being present, it is more reasonable to assume that Component II represents a Late Archaic Period Falls Phase occupation at this site.

The cultural materials of Component III, dated by a radiocarbon assay of 5090 ± 80 BP on charcoal collected from a small, bisque-rimmed fire pit, include as wide a variety as found in Component I. The projectile point assemblage is dominated by broad-necked stemmed and side-notched varieties.

Component IV is represented by the artifacts, debitage and fire pit uncovered at a depth of approximately 110 to 150 cm below the surface. Charcoal collected from the fire pit, which also contained small fragments of calcined bone, returned a date of 6270 ± 130 BP. The two projectile points recovered from this component included an asymmetrical broad-stemmed specimen and a convex base specimen. While both Component III and Component IV were found to cluster with Middle Archaic Period assemblages, the radiocarbon date for Component IV is consistent with an Early Archaic Period assignment.

The Narrows Site is currently the oldest radiocarbon-dated occupation in the Umpqua Basin. Regardless of the absence of Coquille Series points in Component II, much of the significance of the Narrows Site lies in its providing the best example of a local sequence (Willey and Phillips 1958:24-26) thus far excavated in the region.

The Martin Creek Site

The Martin Creek Site, located in the middle Umpqua Basin adjacent to the main stem of the Umpqua River and a short distance downstream from the tributary for which it is named, consists of a pair of rockshelters within which were found dense cultural deposits.

Upper Shelter contains cultural deposits of at least 90 cm in thickness. Recovered from these deposits were 129 tools, 1259 pieces of lithic debitage, 3968 pieces of bone, and approximately 192 gm of freshwater mussel shell. The majority of the faunal remains recovered from Upper Shelter were found to be pieces of large mammal, perhaps deer. Fish remains--salmon, sucker and squawfish--represented a small fraction. Hazelnut and myrtle nut fragments were collected. The tool assemblage includes knife fragments, scrapers, choppers, pestles, an abrader, and worked bone. The projectile point assemblage is dominated by Gunther Barbed and Gunther Tanged specimens. An examination of the vertical distribution of cultural debris indicates the presence of three components or occupational episodes, the uppermost of which is dated by two radiocarbon assays of 350 ± 60 BP and 400 ± 70 BP.

The tool assemblage, and faunal and botanical evidence, point to an occupation of Upper Shelter by a small group, possibly a nuclear family, who exploited the local resources during the late summer and early fall. The projectile point assemblage of Upper Shelter--the three occupational episodes were combined for the purpose of the analysis--was found to cluster with other Late Archaic Period assemblages of the Narrows Phase. The radiocarbon dates for Upper Shelter are consistent with this assignment.

Lower Shelter, filled to the ceiling with alluvium and colluvium, contains a cultural deposit of approximately 70 cm in thickness beginning at a depth of 150 cm below the surface. Collected from these deposits were 15 tools and 153 pieces of lithic debitage. The tools included a knife, scrapers, choppers, and hammerstones. No faunal remains were recovered. The three projectile points recovered include two V-stemmed Coquille Series specimens and one serrated foliate. This assemblage clusters with others assigned to the Falls Phase of the Late Archaic Period in the Umpqua Basin. The single component of Lower Shelter is dated by a radiocarbon assay of 420 ± 60 BP. This date is consistent with the dates from Component II at the Narrows Site, which is considered to also represent a Falls Phase occupation.

The Martin Creek Site provides additional evidence for the efficacy of the local sequence defined by the analysis of Umpqua Basin projectile point assemblages.

AN UMPQUA BASIN CULTURAL CHRONOLOGY

In order to investigate broader questions regarding the prehistory of the Umpqua Basin, an understanding of the basin's cultural chronology is fundamental. To this end, an analysis of 21 projectile point assemblages was undertaken. The chronology offered below is based upon this comparison as well as the radiocarbon dates with which some of the assemblages are associated.

The prehistory of western Oregon is generally divided into four periods (cf. Beckham et al. 1981; Budy et al. 1986). These periods and their temporal span include:

Paleoindian	?	-	8000 BP
Early Archaic	8000	-	6000 BP
Middle Archaic	6000	-	2000 BP
Late Archaic	2000	-	Contact

This general scheme provides an appropriate framework within which the Umpqua Basin materials may be placed.

Paleoindian Period

The antiquity of human occupation in western Oregon is suggested by the discovery of isolated fluted points. Dated elsewhere in North America to as old as 11,500 years ago and associated with big game hunters and extinct Rancholabrean megafauna, several of these distinctive artifacts have been found on the west side of the Cascades (Minor 1985). In the Umpqua Basin, along the North Umpqua River, two fluted points were found by a local collector (Hanes 1976; Minor 1985). These artifacts were recovered from streamside gravels approximately one mile downstream from the Grubbe Ranch Site (Earl Henbest, pers. com.).

Recent radiocarbon-dated sites in western Oregon, while not containing indisputable evidence of Paleoindian occupation, do help confirm the likelihood of materials of such antiquity. On the floodplain of the Long Tom River in the upper Willamette Valley a date of nearly 9,000 years ago was returned on charcoal from an amorphous hearth-like feature which was associated with lithic cultural material (Connolly 1987). Additional investigation in this area has confirmed human occupation more than 9,000 years ago (Lynn Peterson pers. com.). In the Rogue River Basin to the south of the Umpqua Basin, excavations at the Marial Site have discovered an occupation dating to approximately 8,500 years ago (Schreindorfer 1985).

The evidence for the occupation of the Umpqua Basin during the Paleoindian Period rests upon the presence of isolated finds of fluted points, diagnostic artifacts of the period. Nothing is known of the character of this occupation.

Early Archaic Period

While the data for the occupation of the basin during the Early Archaic Period are admittedly sparse, three dated sites provide sufficient evidence to suggest that each of the three regions of the Umpqua Basin--upper, middle, and lower--was inhabited during this period.

In the upper Umpqua Basin, the lower component of the Medicine Creek Site (Snyder 1981c), discovered below Mazama Ash, includes an assemblage of andesite biface fragments and broad-stemmed projectile points. It probably represents a short-term occupation of the location by a group of hunters.

The Tahkenitch Landing Site (Minor and Toepel 1986), although located beyond the confines of the Umpqua Basin proper, is in sufficient proximity to the mouth of the Umpqua River to allow extrapolation of the results of investigations at this locality to the lower Umpqua Basin. Researchers at this site discovered an artifact and faunal assemblage interpreted to represent a seasonal fishing camp. Radiocarbon dates for this early period are given as 7960 ± 90 BP and 6880 ± 80 BP.

While hunting was undoubtedly an important subsistence activity in each region of the basin, the exploitation of the abundant anadromous fish runs is suspected to have also been important to the occupants of the Umpqua Basin at this early date. Though evidence for this is circumstantial, it is compelling. It has already been demonstrated that a fishing technology existed in an estuarine setting near the mouth of the Umpqua River almost 8000 years ago. The setting of the Narrows Site, on a narrow terrace above a natural constriction in the river, and the continued occupation of this location until historic times when it is described as an aboriginal fishery, supports the hypothesis that it was used as such in antiquity, in much the same manner as Five Mile Rapids was used on the Columbia River (Cressman 1960). The artifact assemblage associated with Component IV at the Narrows Site, with its lack of obvious fishing gear, suggests that a fishing technology employing perishable equipment was in use. Such a technology might include dip nets, traps and weirs.

Extra-basin trade during the Early Archaic is indicated by the obsidian debitage recovered at the Narrows Site.

Middle Archaic Period

The projectile point analysis found that assemblages of the Middle Archaic Period were best characterized as containing broad-necked points.

Components assignable to the Middle Archaic Period are found throughout the Umpqua Basin in a variety of settings. The resources of the forested upper Umpqua Basin were exploited by groups of hunters at such locations as Horseshoe #6 (Spencer 1987), Reynolds Creek (Churchill 1986), Hughes I Rockshelter (Keyser and Carlson 1987) and Bogus Creek (Winthrop 1989).

Fishing continued at the Narrows Site during Component III times, radiocarbon dated to 5090 ± 80 BP. The setting of the Glide Ranger Station Site, at the confluence of the North Umpqua and Little rivers, would lend itself not only to the exploitation of riverine resources such as anadromous fish, but also to the abundant vegetal resources found on the low, broad river terraces of the region. Vegetal resources were brought to camp for processing, as the stone bowl mortars and pestles found at the Narrows Site attest.

Obsidian continued to be brought into the Umpqua Basin. Sourcing information from the Bogus Creek Site indicates that the Silver Lake/Sycan Marsh source of south central Oregon was the origin of most of this material.

Late Archaic Period

The projectile point analysis indicates that the Late Archaic Period components of the middle and upper Umpqua Basin may be sorted into two geographically separable and partly contemporaneous phases.

The Falls Phase is named for the assemblages of the South Umpqua Falls Rockshelters (Minor 1983, 1987). Projectile point assemblages of this phase typically contain shouldered Coquille Series specimens. The geographical distribution of assemblages of this phase is generally limited to the upper South Umpqua drainage. However, evidence from the Lower Shelter at the Martin Creek Site on the main stem of the Umpqua River, and the Shivigny East and Canton Creek sites in the upper North Umpqua drainage, indicates that the Falls Phase was at one time a basin-wide Late Archaic expression. It is believed that Component II at the Narrows Site, with a terminal date of 450 ± 70 BP, should be considered among the Falls Phase assemblages. The distribution of the Falls Phase, in the South Umpqua drainage, is consistent with the historic distribution of the Takelman Cow Creek Indians.

In the North Umpqua drainage and along the main stem of the Umpqua River, the Narrows Phase replaces the Falls Phase by approximately 400 years ago. Assemblages of the Narrows Phase, named for the Narrows Site, typically contain Gunther Barbed projectile points. The distribution of Narrows Phase assemblages coincides with the geographic distribution of the Athapaskan Upper Umpqua people, thought to be late arrivals to the region.

During the Late Archaic Period a broad range of resources were exploited in the Umpqua Basin. Faunal remains from rockshelter deposits in the middle and upper Umpqua Basin indicate that deer was an important source of food, while fish and freshwater mussels continued to be exploited.

The presence of obsidian tools and debitage in archaeological assemblages of phases of this period indicates the continuation of extra-basin trade contacts. Sourcing of obsidian from sites with Late Archaic projectile point types reveals that material from the Silver Lake/Sycan Marsh source was still being imported into the basin (J. Berryman 1987).

The burial pattern during the Late Archaic in the Umpqua Basin--flexed burials placed in shallow, basin-shaped pits--was consistent with that seen in other interior western Oregon locations.

Archaeological data combined with ethnohistoric information provide a picture of groups of people exploiting a broad range of resources. Nucleated winter villages, where stores of foodstuffs could be cached, were located in the valley lowlands. Resources of the upland areas were exploited during the summer and fall months. These included not only game, but berries as well. These upland areas served as the location for rendezvous as well as sites for vision quests.

ASSESSING LOCAL AND REGIONAL CHRONOLOGIES

The following observations are offered regarding previously proposed chronological schemes for the Umpqua Basin. The Honey and Hogg (1980) scheme was a well-reasoned and logical attempt to construct a cultural chronology for the Umpqua Basin. Unfortunately, the archaeological data gathered since their work do not substantiate their proposal. Given the recent work at the Tahkenitch Landing Site, with its date of nearly 8000 years ago associated with fish remains (Minor and Toepel 1986), and the location of the Narrows Site with its date of nearly 6300 years ago, early exploitation of aquatic resources--marine, estuarine, and riverine--may be thought to have played a substantially more important role than Honey and Hogg proposed. Furthermore, it may be more reasonable to suppose that the original groups of people entering the basin possessed a technology already suited to the exploitation of both terrestrial and riverine resources.

The Glade Tradition, said to date from 9000 to 300 years ago, was proposed by Connolly (1986) as a regional expression of the Cascade Pattern. In a comparison of 31 southwest Oregon and northern California assemblages by Connolly, it was found that Coquille Series projectile points a) strongly grouped with broad-necked points, b) occurred throughout the cultural deposits of the 8500 year old Marial Site, and c) were associated with serrated foliate points, which are common in the early components at Marial.

In the Umpqua Basin analysis, on the other hand, the projectile point types used to define the Glade Tradition--large side-notched and stemmed points, foliate points, and the shouldered Coquille Series points--were discovered to define two separate temporal groups. Large side-notched and stemmed points are associated with a set of Middle Archaic assemblages which date from approximately 6300 to 2800 years ago. The Coquille Series projectile point type that figures prominently in the definition of the Glade Tradition is, in the Umpqua Basin analysis, typically associated with Late Archaic assemblages that in some cases also contain Gunther Stemmed points. Assemblages containing the Coquille Series have been used to define the Falls Phase of the Late Archaic in the Umpqua Basin. Assemblages dominated by Gunther Series points have been used to define the Narrows Phase.

It was recognized in the previous chapter that the sample size of the Umpqua Basin assemblages was quite small and that mixed assemblages were employed in the analysis. It is possible that the discrepancy between the results obtained by Connolly and the present Umpqua Basin analysis is a product of sample size, Connolly's assemblages being far larger. Resolving this problem will require the recovery in the Umpqua Basin of sizeable assemblages from good stratigraphic contexts. In any event, the effective result of the present grouping of Umpqua Basin assemblages is a periodization of southwest Oregon prehistory, recognizing the presence of regional cultural patterns.

Authorities agree that Pacific Coast Athapaskan people--Klatskanie, Kwalhioqua, Upper Umpqua, Upper Coquille, Galice, Chasta Costa, Euchre Creek, Tolowa, Applegate, Chetco, Tututni, Hupa, Mattole, Kato, and Wailaki--had their origins in the subarctic regions of Canada (Jacobs 1937; Hoijer 1956; Krauss 1973). Dates for the divergence of Pacific Athapaskan from Northern Athapaskan range from 500 BC - AD 500 (Krauss 1973; Krauss and Golla 1981) to approximately 1000 years ago (Hoijer 1956).

A variety of migration and entry routes have been proposed for the Pacific Athapaskans. Among these include a) a route east of the Cascades with an entry into the headwaters of major streams (Jacobs 1937), b) a west-of-Cascades and southerly migration through the Willamette Valley (Cressman 1977), and c) a coastal entry and subsequent northerly migration to the Umpqua Basin (Connolly 1986). In each case there is a riverine, if not coastal, orientation to the communities. Regarding the distribution of Pacific Athapaskan language communities relative to other language communities, the following observation has been offered:

> Athabaskan is never found at the mouth of a stream without being found further up that stream; but where it is found upriver it may not be found downriver. Perhaps the only fitting explanation is that of speech advance from the interior into coastal upriver villages and inability to spread farther downriver into still larger villages before the close of native history in the west (Jacobs 1937:63).

The distribution of the Athapaskan-speaking Upper Umpqua was used by Jacobs (1937) as an example of the process by which language communities come to occupy and occasionally dominate an area.

The appearance of Athapaskan-speaking populations in the Umpqua Basin would appear to be much more recent than either the Honey and Hogg (1980) or Pettigrew and Lebow (1987) chronologies propose. According to these chronologies, Pacific Athapaskan language communities were established in southwest Oregon and the Umpqua Basin by at least AD 500 and probably as early as 2500 BC (Pettigrew and Lebow 1987). While an hypothesized early arrival would appear to be consistent with some Athapaskan linguistic studies that provide dates for the divergence of Pacific Athapaskan from Northern Athapaskan on the order of approximately 500 BC (Krauss 1973; Krauss and Golla 1981), both schemes may have neglected Cressman's caveat regarding the antiquity of divergence and the time of arrival of a particular linguistic group.

The statement by Elsasser and Heizer (1966:2), "The Hupa are

> estimated, by lexicostatic method (Hoijer 1956; Hymes 1957) to have been resident on the Lower Trinity River for about 1,000 years...," is a misinterpretation of glottochronological data. These say only that the divergence time of the Hupa and the Northern groups was about 1,000 years and give no information whatever on the arrival date of the Hupa on the Lower Trinity River (Cressman 1977:92).

The identification of the Coquille Series projectile point type with the arrival of the Athapaskan populations in southwest Oregon (Pettigrew and Lebow 1987) is not borne out in the present study of Umpqua Basin projectile point assemblages.

While much more work needs to be done in the Umpqua Basin to adequately address Connolly's hypothesis regarding a coastal migration route of Pacific Coast Athapaskan, it seems reasonable to associate the assemblages of the Narrows Phase with his broadly defined Gunther Sphere.

The Umpqua Basin remains a fertile region for archaeologists. This report has demonstrated that the basin contains stratified, multicomponent sites of some antiquity that have the potential for assessing and refining the regional sequence.

PART V

APPENDICES
AND
REFERENCES CITED

APPENDIX A

ARTIFACT LABELING AND LOT NUMBER SYSTEM IN USE AT THE NARROWS SITE

The artifacts recovered from the Narrows Site were labeled using a lot number code system. In addition to the site number, 35DO153, a set of two numbers is assigned to an artifact. The first of these is the "lot number" which is uniquely assigned to a single level of a single quad of a particular test pit, thus maintaining vertical and horizontal provenience of each artifact. The second number distinguishes one artifact from another, in sequential fashion, found in the same level of the same excavation unit. In the case of artifacts found in situ, the second set begins with the number 501.

Provided below are the provenience data for each of the lot numbers. Lot numbers 1-39 and 46-124 represent material recovered during the 1986 field season. Lot numbers 40-44 include material collected by David Corliss in 1981, while testing the site. Lot numbers 125-255 represent the material recovered during the testing conducted in the summer of 1987. The material recovered during the excavation of the burial and an adjacent test probe in April of 1987 is represented by lot numbers 256-271.

Number	Unit	Quad	Level	Elevation	Number	Unit	Quad	Level	Elevation
1	A	A	1	99.10-98.90	24	B	C	3	"
2	A	B	1	"	25	A	D	2	98.90-98.80
3	A	C	1	"	26	A	A	3	98.80-98.70
4	A	D	1	"	27	A	B	3	"
5	A	A	1	"	28	A	C	3	"
6	A	B	1	"	29	A	D	3	"
7	A	C	1	"	30	B	D	3	98.90-98.80
8	A	D	1	"	31	B	A	4	98.80-98.70
9	A	A	2	98.90-98.80	32	B	B	4	"
10	A	B	2	"	33	B	C	4	"
11	A	C	2	"	34	C	D	1	99.59-99.50
12	B	A&C	1	99.10-99.00	35	C	B	1	"
13	B	B	1	"	36	C	C	2	99.54-99.40
14	B	D	1	"	37	C	C	2	"
15	B	B	1	"	38	C	D	2	99.50-99.40
16	B	D	1	"	39	C	C	3	99.40-99.30
17	B	A	2	99.00-98.90	40	Surface Collection: 5/7/81			
18	B	A	2	"	41	TP-1		1	1.80 - 1.70
19	B	B	2	"	42	TP-1		2	
20	B	C	2	"	43	TP-2		1	
21	B	D	2	"	44	Unmarked Bag			
22	B	A	3	98.90-98.80	45	Surface Collection: 9/11/84			
23	B	B	3	"	46	B	D	4	98.80-98.70

Number	Unit	Quad	Level	Elevation
47	B	B	5	98.70-98.60
48	B	D	5	"
49	B	B	6	98.60-98.50
50	B	B	7	98.50-98.40
51	C	D	3	99.40-99.30
52	C	C	4	99.30-99.20
53	C	D	4	"
54	C	C	5	99.20-99.10
55	D	A	1	99.10-98.90
56	D	B	1	"
57	D	C	1	"
58	D	D	1	"
59	D	A	1	"
60	D	B	1	"
61	D	C	1	"
62	D	D	1	"
63	D	A	2	98.90-98.80
64	D	B	2	"
65	D	C	2	"
66	F	A	1	99.05-98.90
67	F	B	1	"
68	F	C	1	"
69	F	D	1	"
70	F	B	1	"
71	F	D	1	"
72	F	A	2	98.90-98.80
73	F	B	2	"
74	F	C	2	"
75	F	D	2	"
76	F	A	3	98.80-98.70
77	F	B	3	"
78	F	C	3	"
79	F	D	3	"
80	F	A	4	98.70-98.60
81	E	A	1	99.18-99.00
82	E	C	1	"
83	E	A	1	"
84	G	A	1	99.00-98.00
85	G	B	1	"
86	G	C	1	"
87	G	D	1	"
88	G	B	1	"
89	G	C	1	"
90	G	D	1	"
91	G	A	2	98.90-98.80
92	G	B	2	"
93	G	C	2	"
94	G	D	2	"
95	G	A	3	98.80-98.70
96	G	B	3	"
97	G	C	3	"
98	G	D	3	"
99	G	A	4	98.70-98.60
100	G	B	4	"
101	G	C	4	"
102	G	D	4	"
103	G	D	4	"
104	G	A	5	98.60-98.50
105	G	C	5	"
106	G	A	6	98.50-98.40
107	G	C	6	"
108	G	A	6	"
109	G	B	6	"
110	G	D	6	Feature 1
111	F	B	4	98.70-98.60
112	F	C	4	"
113	F	D	4	"
114	F	B	4	"
115	F	D	4	"
116	F	A	5	98.60-98.50
117	F	C	5	"
118	F	A	5	"
119	F	B	5	"
120	E	C	1	99.18-99.00
121	E	A	2	99.00-98.90
122	E	C	2	"
123	E	A	3	98.90-98.80
124	E	C	3	"
125	A	A	4	98.70-98.60
126	A	B	4	"
127	A	C	4	"
128	A	D	4	"
129	A	A	5	98.60-98.50
130	A	B	5	"
131	A	C	5	"
132	A	D	5	"
133	A	A	6	98.50-98.40
134	A	B	6	"
135	A	C	6	"
136	A	D	6	"
137	A	C	7	98.40-98.30
138	A	Surface: from 1986 backdirt		
139	B	A	5	98.70-98.60
140	B	C	5	"
141	B	A	6	98.60-98.50
142	B	B	6	"
143	B	C	6	"
144	B	D	6	"
145	B	A	7	98.50-98.40
146	B	B	7	"

Number	Unit	Quad	Level	Elevation
147	B	C	7	"
148	B	D	7	"
149	B	A	8	98.40-98.30
150	B	B	8	"
151	B	C	8	"
152	B	D	8	"
153	B	A	9	98.30-98.20
154	B	C	9	"
155	B	A	10	98.20-98.10
156	B	C	10	"
157	B	A	11	98.10-98.00
158	B	C	11	"
159	B	A	12	98.00-97.90
160	B	A	13	97.90-97.80
161	B	A	14	97.80-97.70
162	C	D	5	99.20-99.10
163	C	C	5	99.10-99.00
164	C	D	6	"
165	C	C	7	99.00-98.90
166	C	D	7	"
167	C	C	8	98.90-98.80
168	C	D	8	"
169	C	C	9	98.80-98.70
170	C	D	9	"
171	C	C	10	98.70-98.60
172	D	D	2	98.90-98.80
173	D	A	3	98.80-98.70
174	D	B	3	"
175	D	C	3	"
176	D	D	3	"
177	D	A	4	98.70-98.60
178	D	B	4	"
179	D	C	4	"
180	D	D	4	"
181	D	A	5	98.60-98.50
182	D	B	5	"
183	D	C	5	"
184	D	D	5	"
185	D	A	6	98.50-98.40
186	D	B	6	"
187	D	C	6	"
188	D	D	6	"
189	D	A	7	98.40-98.30
190	D	B	7	"
191	D	D	7	"
192	D	A	8	98.30-98.20
193	D	B	8	"
194	D	D	8	"
195	D	B	9	98.20-98.10
196	D	D	9	"
197	D	B	10	98.10-98.00
198	F	A	6	98.50-98.40
199	F	B	6	"
200	F	C	6	"
201	F	D	6	"
202	F	A	7	98.40-98.30
203	F	B	7	"
204	F	C	7	"
205	F	D	7	"
206	F	A	8	98.30-98.20
207	F	B	8	"
208	F	C	8	"
209	F	D	8	"
210	F	A	9	98.20-98.10
211	F	B	9	"
212	F	C	9	"
213	F	D	9	"
214	F	A	10	98.10-98.00
215	F	B	10	"
216	F	C	10	"
217	F	D	10	"
218	F	A	11	98.00-97.90
219	F	B	11	"
220	F	C	11	"
221	F	D	11	"
222	F	A	12	97.90-97.80
223	F	C	12	"
224	F	D	12	"
225	F	A	13	97.80-97.70
226	F	A	14	97.70-97.60
227	F	Surface		
228	G	A	6	98.50-98.40
229	G	C	6	"
230	G	D	6	"
231	G	A	7	98.40-98.30
232	G	C	7	"
233	G	D	7	"
234	G	A	8	98.30-98.20
235	G	C	8	"
236	G	D	8	"
237	G	A	9	98.20-98.10
238	G	C	9	"
239	G	D	9	"
240	G	A	10	98.10-98.00
241	G	B	10	"
242	G	C	10	"
243	G	D	10	"
244	G	A	11	98.00-97.90
245	G	B	11	"
246	G	C	11	"

Number	Unit	Quad	Level	Elevation
247	G	D	11	"
248	G	A	12	97.90-97.80
249	G	C	12	"
250	G	D	12	"
251	G	A	13	97.80-97.70
252	G	C	13	"
253	G	A	14	97.70-97.60
254	G	C	14	"
255	G	A	15	97.60-97.50
256	G	B	6	98.50-98.40
257	G	B	7	98.40-98.30
258	G	B	8	98.30-98.20
259	G	B	9	98.20-98.10
260	G	B	10	98.10-98.00
261	G	B	11	98.00-97.90
262	G	B	12	97.90-97.80
263	G	B	13	97.80-97.70
264	G	B	14	97.70-97.60
265	H	C	1	99.00-98.90
266	H	C	2	98.90-98.80
267	H	C	3	98.80-98.70
268	H	C	4-5	98.70-98.50
269	G	D	6	98.50-98.40
270	H	C	1-3	99.00-98.70
271		Surface		

APPENDIX B

ARTIFACT LABELING AND LOT NUMBER SYSTEM IN USE AT THE MARTIN CREEK SITE

The artifacts recovered from the Martin Creek Site were labeled using a lot number code system. In addition to the site number, 35DO147, a set of two numbers is assigned to an artifact. The first of these is the "lot number" which is uniquely assigned to a single level of a single quad of a particular test pit, thus maintaining vertical and horizontal provenience of each artifact. The second number distinguishes one artifact from another, in sequential fashion, found in the same level of the same excavation unit. In the case of artifacts found in situ, the second set begins with the number 501.

Provided below are the provenience data for each of the lot numbers. Lot numbers 1-95 and 108-130 represent material recovered during the 1986 field season. Lot numbers 96-107 include material collected by David Corliss in 1980 and 1981, while testing the site.

Number	Unit	Quad	Level	Elevation
1	A	C&D	1	102.27-101.76
2	F	C	10	99.30-99.20
3	F	D	14	98.60-98.50
4	F	D	16	98.30-98.20
5	F	D	17	98.20-98.10
6	E	D	15	98.50-98.40
7	E	C	17	98.20-98.10
8	E	D	17	"
9	C	C&D	1	102.27-101.76
10	C	A&B	2	
11	C	A&B	1	
12	C	A	2	102.04-101.95
13	C	B	2	"
14	C	A	3	101.95-101.90
15	C	B	3	"
16	C	A	4	101.90-101.85
17	C	B	4	"
18	C	A	5	101.85-101.80
19	C	B	5	"
20	C	A	6	101.80-101.75
21	C	B	6	"
22	C	A	7	101.75-101.70
23	C	B	7	"
24	C	A	8	101.70-101.65
25	C	B	8	"
26	C	A	9	101.65-101.60
27	C	B	9	"
28	B	B	1	102.67-102.50
29	B	B	2	102.50-102.45
30	B	B	3	102.45-102.40
31	B	D	3	"
32	B	B	4	102.40-102.35
33	B	B	5	102.35-102.30
34	B	D	5	"
35	B	B	6	102.30-102.25
36	B	D	6	"
37	B	B	7	102.25-102.20
38	B	D	7	"
39	B	B	8	102.20-102.15
40	B	D	8	"
41	B	B	9	102.15-102.10
42	B	D	9	"
43	B	B	10	102.10-102.05
44	B	D	10	"
45	B	B	11	102.05-102.00
46	B	D	11	"
47	B	B	12	102.00-101.95
48	B	D	12	"
49	B	D	13	101.95-101.90
50	F	D	14	98.50-98.40
51	E	C	15	98.40-98.30
52	E	C	16	98.30-98.20
53	E	C	14	98.50-98.40
54	F	D	15	98.40-98.30
55	A	B	1	101.39-101.10
56	A	B	2	101.10-100.90

Number	Unit	Quad	Level	Elevation
57	A	B	3	100.90-100.70
58	E	B	15	98.50-98.40
59	E	B	16	98.40-98.30
60	E	D	16	"
61	E	B	17	98.30-98.20
62	E	D	17	"
63	E	A	18	98.20-98.10
64	E	B	18	"
65	E	D	18	"
66	E	B	19	98.10-98.00
67	E	C	19	"
68	E	D	19	"
69	E	C	20	98.00-97.90
70	E	D	20	"
71	E	C	21	97.90-97.80
72	C	C	8	101.70-101.65
73	C	D	8	"
74	C	C	9	101.65-101.60
75	C	D	9	"
76	C	A	10	101.60-101.55
77	C	B	10	"
78	C	C	10	"
79	C	D	10	101.60-101.55
80	C	A	11	101.55-101.50
81	C	B	11	"
82	C	A	12	101.50-101.45
83	C	B	12	"
84	C	A	13	101.45-101.40
85	C	B	13	"
86	C	north profile slough		
87	C	A	14	101.40-101.35
88	C	B	14	"
89	D	C	1	102.15-102.12
90	D	C	3	102.10-102.05
91	D	C	4	102.05-102.00
92	B	D	14	101.90-101.85
93	B	D	15	101.85-101.80
94	B	D	16	101.80-101.75
95	B	D	17	101.75-101.70
96	TP-1	NE 1/4		192 cm - bedrock
97	TP-1	N 1/2		168 cm - 192 cm
98	TP-1	P 1		204 cm
99	TP-1	NW 1/4		228 cm - 256 cm (bedrock)
100	TP-2			Layer 2
101	TP-2			Below Layer 2
102	TP-2			Layer 3
103	TP-2			Layer 3/4
104	TP-2			Layer 4
105	TP-2 expansion (1981)			Layer 1
106	TP-2 expansion (1981)			Layer 2(a)
107				Surface
108	G	C	30	96.10-96.00
109	C	C	11	101.55-101.50
110	C	D	11	"
111	C	C	12	101.50-101.45
112	C	D	12	"
113	C	C	13	101.45-101.40
114	C	D	13	"
115	C	C	14	101.40-101.35
116	C	D	14	"
117	C	ABCD	14	" (floor sweepings)
118	D	C	5	102.00-101.95
119	D	C	6	101.95-101.90
120	D	C	7	101.90-101.85
121	D	C	8	101.85-101.80
122	D	C	9	101.80-101.75
123	D	C	10	101.75-101.70
124	D	C	11	101.70-101.65
125	D	C	12	101.65-101.60
126	D	C	13	101.60-101.55
127	D	C	14	101.55-101.50
128	D	C	15	101.50-101.45
129	D	C	16	101.45-101.40
130	D	C	1-16	(profiling)

REFERENCES CITED

Aikens, C. Melvin
1984 Archaeology of Oregon. U.S. Department of Interior, Bureau of Land Management, Oregon State Office.

Allen, William
1938 William Allen, A Personal Interview. In Reminiscences of Southern Oregon Pioneers, a WPA Project. Douglas County Library, Roseburg, Oregon.

Angel, J. L.
1966 Porotic Hyperostosis, Anemies, Malarias, and Marshes in the Prehistoric Eastern Mediterranean. Science 153:760-763.

1967 Porotic Hyperostosis or Osteoporosis Symmetrica. In Diseases in Antiquity, D.R. Brothwell and A.T. Sandison (eds), pp. 378-389. Charles C. Thomas Press, Springfield.

Applegate, Jesse
1914 Recollections of My Boyhood. Review Print, Roseburg, Oregon.

Bailey, Vernon
1936 The Mammals and Life Zones of Oregon. North American Fauna No. 55. U.S. Department of Agriculture, Bureau of Biological Survey, Washington, D.C.

Bakken, Lavola J.
1973 Land of the North Umpquas: Peaceful Indians of the West. Te-Cum-Tom Publications, Grants Pass, Oregon.

Baldwin, Ewart M.
1981 Geology of Oregon, 3rd ed. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Barner, Isaac N.
1979 Archaeological Testing and Evaluation of the Glide Ranger Station, Douglas County, Oregon. Report to the Umpqua National Forest by the Department of Anthropology, Oregon State University, Corvallis.

Bass, W.M.
1971 Human Osteology: A Laboratory and Field Manual. Missouri Archaeological Society, Columbia.

Baumhoff, Martin A.
1963 Ecological Determinants of Aboriginal California Populations. University of California Publications in American Archaeology and Ethnology, 49:2:155-236. Berkeley.

Baxter, Paul W.
1987 Archaeological Testing at Limpy Rock Shelter: An Upland Hunting Camp in the North Umpqua Valley. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 65.

1988 Analysis of the Artifact Collection from the Calf Ridge Site (35DO408), Upper North Umpqua Basin, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 70.

Baxter, Paul W. and Thomas J. Connolly
1985 Vine Rockshelter: A Report of Excavations at an Intermittent Hunting Camp in the Western Cascades. A report to the Rigdon District, Willamette National Forest by Baxter and Connolly, Archaeological Data Consultants, Eugene, Oregon.

Baxter, Paul W. and Rick Minor
1987 US Sprint Fiber Optic Cable Project Oroville, California to Eugene, Oregon. Archaeological Testing of Seven Sites in Oregon; Addendum #3 to the Technical Report. Report to US Sprint by Heritage Research Associates, Eugene. HRA Report No. 63.

Baxter, Paul W. and William F. Willingham
1980 The Roseburg District Bureau of Land Management Class II Cultural Resources Inventory. Report to the Bureau of Land Management, Roseburg District. Department of Anthropology, University of Oregon, Eugene.

Beckham, Stephen Dow
1986 Land of the Umpqua: A History of Douglas County, Oregon. Douglas County Commissioners, Roseburg, Oregon.

Beckham, Stephen D., Rick Minor, and Kathryn A. Toepel
1981 Prehistory and History of BLM Lands in West-Central Oregon: A Cultural Resource Overview. University of Oregon Anthropological Papers 25. Eugene.

Berreman, Joel V.
1944 Chetco Archaeology: A report of the Lone Ranch Creek Shell Mound on the Coast of Southern Oregon. American Anthropological Association, General Series in Anthropology, No. 11.

Berryman, Judy A.
1987 Archaeological Site Evaluation of the Little Oak Flat Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Berryman, Stanley R.
1987 Archaeological Site Evaluation of 35DO265, the Apple Creek Site, Umpqua National Forest, Roseburg, Oregon. Report to the Umpqua National Forest by TMI Environmental Services, San Diego, California.

Bicchieri, Barbara
1975 Units of Culture and Units of Time: Periodization and Its Use in Syntheses of Plateau Prehistory. *Northwest Anthropological Research Notes*, 9(2):246-266.

Boyd, Robert
1975 Another Look at the "Fever and Ague" of Western Oregon. *Ethnohistory* 22:2:135-154.

1986 Strategies of Indian Burning in the Willamette Valley. *Canadian Journal of Anthropology*, 5:1:65-86.

Brauner, David and William Honey
1977 Cultural Resource Evaluation of the Steamboat Creek Drainage, Douglas County, Oregon. Report to the Umpqua National Forest by the Department of Anthropology, Oregon State University, Corvallis.

Brothwell, D.R.
1963 *Dental Anthropology*. Pergamon Press, Oxford.

1981 *Digging Up Bones*. British Museum of Natural History, London.

Buchanan, J.A.
1938 The "Umpquas". Pioneer interview on file at the Umpqua National Forest, Roseburg, Oregon.

Budy, Elizabeth E. et al.
1986 Test Excavations at Site 35JA59, Elk Creek Lake Project, Jackson County, Oregon. Report to the US Army Corps of Engineers, Portland District, by Intermountain Research, Silver City, Nevada.

Carlson, D.S., G.J. Armelagos, and D.P. VanGerven
1974 Factors Influencing the Etiology of Cribra Orbitalia in Prehistoric Nubia. *Journal of Human Evolution*, 3:405-410.

Churchill, Thomas E.
1986 Archaeological Investigations of the Reynolds Site (35-DO-372). Report to the Umpqua National Forest by Coastal Magnetic Search & Survey, Salem, Oregon.

Churchill, Thomas E. and Paul C. Jenkins
1985 Testing and Evaluation of the Glide Ranger Station Site, 35-DO-58. Report to Umpqua National Forest by Coastal Magnetic Survey, Salem, Oregon.

Connolly, Thomas J.

1981 Preliminary Testing of Archaeological Sites Along PP&L's Proposed Eugene-Medford 500 KV Transmission Corridor: 35DO199 and 35DO61. Report to Envirosphere Co. by the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1986 Cultural Stability and Change in the Prehistory of Southwest Oregon and Northern California. Unpublished PhD Dissertation on file with the Department of Anthropology, University of Oregon, Eugene.

1987 Recent Highway Archaeology Work in Oregon. Paper presented at the Association of Oregon Archaeologists 3rd Annual Conference, Ashland, Oregon. November 6-7, 1987.

1988a A Prehistoric Culture-Historical Model for the Siskiyou Mountain Region of Southwest Oregon and Northern California. Paper presented at the Society for American Archaeology, 53rd Annual Meeting, Phoenix, Arizona. April 27 - May 1, 1988.

1988b Archaeological Evaluation of Sites Along the Crater Lake Highway, Jackson County: Trail to Casey State Park Section. Oregon State Museum of Anthropology Report 88-4, University of Oregon, Eugene.

Connolly, Thomas J. and Paul W. Baxter

1986 New Evidence on a "Traditional" Topic in Pacific Northwest Prehistory. In Contributions to the Archaeology of Oregon 1983-1986, K.M. Ames (ed), pp. 129-146. Occasional Papers No. 3, Association of Oregon Archaeologists.

Cook, Sherburne

1955 The Epidemic of 1830-33 in California and Oregon. University of California Publications in American Archaeology and Ethnology, 43:3:303-326. Berkeley.

Corliss, David

1979 Oregon Archaeological Survey, Site Form 35DO153. On file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1981a 35-DO-153; Letter report and evaluation. On file at the Bureau of Land Managemet, Roseburg District, Roseburg, Oregon.

1981b 35-DO-147 Stratigraphic Evaluation. Manuscript on file, Bureau of Land Management, Roseburg District, Roseburg, Oregon.

Crabtree, Don E. and Earl H. Swanson

1968 Edge-ground Cobbles and Blade-making in the Northwest. Tebiwa, 11:2:50-58.

Cressman, L.S.

1933 Contributions to the Archaeology of Oregon: Final Report on the Gold Hill Burial Site. University of Oregon Studies in Anthropology 1 (1).

1960 Cultural Sequences at the Dalles, Oregon: A contribution to Pacific Northwest Prehistory. *Transactions of the American Philosophical Society*, 80:10.

1977 *Prehistory of the Far West: Homes of Vanished Peoples*. University of Utah Press, Salt Lake City.

Deich, Lyman P.
1982 Aboriginal Clay Figurines from the Upper Rogue Valley in Southwestern Oregon. Unpublished MA Thesis on file with the Department of Anthropology, Portland State University, Portland, Oregon.

Douglas, David
1959 *Journal Kept by David Douglas During His Travels in North America 1823-1827*. Antiquarian Press, Ltd., New York.

Drucker, Phillip
1937 The Tolowa and their Southwest Oregon Kin. *University of California Publications in American Archaeology and Ethnology*, 36:221-300. Berkeley.

Dumond, Don E.
1974 Some Uses of R-mode Analysis in Archaeology. *American Antiquity* 39:2:253-270.

El-Najjar, M.Y., D.J. Ryan, C.G. Turner, and B. Lozoff
1976 The Etiology of Porotic Hyperostosis among the Prehistoric and Historic Anasazi Indians of Southwestern United States. *American Journal of Physical Anthropology*, 44:477-488.

Elsasser, Albert B. and Robert F. Heizer
1966 Excavation of Two Northwestern California Coastal Sites. *Reports of the University of California Archaeological Survey*, No. 67, pp. 1-149. Berkeley.

Federal Insurance Administration
1978 Flood Insurance Study: Douglas County, Oregon, Unincorporated Areas. U.S. Department of Housing and Urban Development.

Flint, A.R.
1855 Subdivisions of T.26S, R.3W, as surveyed by A.R. Flint, Deputy Surveyor, under contract No. 55, dated March 1855. County Surveyor's Record, Douglas County, Oregon, pp 4374-4375. Roseburg.

Ford, James A.
1972 A Quantitative Method For Deriving Cultural Chronology. Museum Brief #9, Museum of Anthropology, University of Missouri, Colombia.

Franklin, Jerry and C.T. Dyrness
1973 *Natural Vegetation of Oregon and Washington*. USDA Forest Service General Technical Report PNW-8. Pacific Northwest Forest and Range Experiment Station, US Department of Agriculture, Portland, Oregon.

Gilbert, B.M. and T.W. McKern
1973 A Method for Aging the Female Os Pubis. *American Journal of Physical Anthropology*, 38:31-38.

Gray, Dennis J.
1987 The Takelma and Their Athapascan Neighbors: A New Ethnographic Synthesis for the Upper Rogue River Area of Southwestern Oregon. *University of Oregon Aanthropological Papers* No. 37, Eugene.

Hanes, Richard C.
1976 Umpqua Valley Prehistory; A First Step Toward Understanding Aboriginal Adaptations to the Southwest Oregon Interior Region. Manuscript on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1977 Archaeological Survey of the Umpqua Valley: A First Year Report. Paper presented at the 30th Annual Northwest Anthropological Conference, April 9, 1977. Victoria, British Columbia.

1978a Oregon Archaeological Survey, Site Form 35DO84. On file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1978b Letter Report to Dr. Hall dated 11/15/78. On file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

Heflin, Eugene
1966 The Pistol River Site of Southwest Oregon. *University of California Archaeological Survey Reports*, 67:151-206. Berkeley.

Heizer, Robert F. and Albert B. Elsasser
1964 Archaeology of Hum-67: The Gunther Island Site in Humboldt Bay, California. *University of California Archaeological Survey Reports*, 62:5-122. Berkeley.

Henbest, Earl
1984 North Umpqua River--Downstream to Forks. Unpublished manuscript on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

Hengen, O.P.
1971 Cribra Orbitalia: Pathogenesis and Probable Etiology. *Homo*, 22:57-75.

Hines, Gustavus
1851 *Life on the Plains of the Pacific*. Geo. H. Derby and Co., Buffalo.

Hodge, Fredrick W. (ed)
1911 Handbook of American Indians North of Mexico. Bureau of American Ethnography, Bulletin 30, Pt. 2. Washington, D.C.

Hoijer, Harry
1956 The Chronology of the Athapascan Languages. *International Journal of American Linguistics* 22:4:219-232.

1960 Athapaskan Languages of the Pacific Coast. In S. Diamond (ed), Culture in History: Essays in Honor of Paul Radin, pp 960-976. Columbia University Press, New York.

Holmes, Russ

1986a List of Plants in the Vicinity of the Narrows Archaeological Site. On file at the Roseburg District Bureau of Land Management, Roseburg, Oregon.

1986b List of Plants in the Vicinity of the Martin Creek Archaeological Site. On file at the Roseburg District Bureau of Land Management, Roseburg, Oregon.

Honey, William D. and Thomas C. Hogg

1980 Cultural Resources Overview, Umpqua National Forest and Bureau of Land Management, Roseburg District. Department of Anthropology, Oregon State University, Corvallis.

Howard, J.R.

1938 J.R. Howard, A Personal Interview. In Reminiscences of Southern Oregon Pioneers, a WPA Project. Douglas County Library, Roseburg, Oregon.

Huss-Ashmore, R., A.H. Goodman, and G.J. Armelagos

1982 Nutritional Inference from Paleopathology. Advances in Archaeological Method and Theory, 5:395-474.

Hymes, Dell H.

1957 A Note on Athapaskan Glottochronology. International Journal of Linguistics, 23:291-97.

Jackson, Charles

1978 History of the Upper Umpqua Indians. Pioneer Days in the South Umpqua Valley, 11:5-9.

1979 Charles Jackson. Pioneer Days in the South Umpqua Valley, 12:11-14.

Jacobs, Melville

1937 Historic Perspectives in Indian Languages of Oregon and Washington. Pacific Northwest Quarterly, 28:1:55-74.

Jacobs, Melville et al.

1945 Kalapuya Texts, Volume I-II. University of Washington Publications in Anthropology, No. 11, Seattle.

Johannessen, Carl L. et al.

1971 The Vegetation of the Willamette Valley. Annals of the Association of American Geographers, 61:286-302.

Johnson, LeRoy Jr.
1968 Item Seriation As An Aid For Elementary Scale and Cluster Analysis. Bulletin No. 15, Museum of Natural History, University of Oregon, Eugene.

Jones, G.T., D.K. Grayson, and C. Beck
1983 Artifact Class Richness and Sample Size in Archaeological Surface Assemblages. In Lulu Linear Punctated: Essays in Honor of George Irving Quimby, R.C. Dunnell and D.K. Grayson, eds. University of Michigan Anthropological Papers No. 72, pp 55-73. Ann Arbor.

Keen, J.A.
1950 A Study of the Difference Between Male and Female Skulls. American Journal of Physical Anthropology, 8:65-79.

Keyser, James D.
1987 Stone, Bone, and Euro-american Artifacts. In Archaeological Testing at Times Square Rockshelter, Douglas County, Oregon, by Rick Minor and Thomas J. Connolly. Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 55.

Keyser, James D. and Vance A. Carlson
1987 Archaeological Testing at Hughes I Rockshelter. In Archaeology of the South Umpqua Falls Rockshelters, Douglas County, Oregon, by Rick Minor. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 64.

Krauss, Michael E.
1973 Na-Dene. In Current Trends in Linguistics: Linguistics in North America, Volume 10. Thomas A. Sebeok, ed., pp 903-978. Mouton, The Hague.

Krauss, Michael E. and Victor K. Golla
1981 Northern Athapaskan Languages. In Handbook of North American Indians, Volume 6: Subarctic, June Helm ed., pp 67-85. Smithsonian Institution, Washington, D.C.

Kroeber, A. L.
1939 Culture and Natural Areas of Native North America. University of California Publications in American Archaeology and Ethnology, 38. Berkeley.

Krogman, W.M.
1961 The Human Skeleton in Forensic Medicine. Charles C. Thomas Press, Springfield.

Lauman, Jim E., et al.
1972 Fish and Wildlife Resources of the Umpqua Basin, Oregon and Their Water Requirements. Oregon State Game Commission, Portland, Oregon.

Leonhardy, Frank C.
1967 The Archaeology of a Late Prehistoric Village in Northwestern California. Museum of Natural History, University of Oregon, Bulletin 4. Eugene.

Lovejoy, C.O.
1985 Dental Wear in the Libhen Population: Its Functional Pattern and Role in the Determination of Adult Skeletal Age at Death. *American Journal of Physical Anthropology*, 68:47-56.

Lukacs, J.R., M. Schultz, and B.E. Hemphill
1985 Dental Pathologies of Two Iron Age Sites from Northern Pakistan. Paper presented at the Eighth Annual Meeting of the Association of South Asian Archaeology, Aarhus, Denmark.

Lyman, R. Lee (ed)
1985 Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275), Southwestern Oregon. Report prepared for the Roseburg Sanitary Authority by the Department of Anthropology, Oregon State University, Corvallis.

Mack, Joanne M.
1983 Archaeological Investigations in the Salt Cave Locality: Subsistence, Uniformity and Cultural Diversity on the Klamath River, Oregon. *University of Oregon Anthropological Papers* 29, Eugene.

1986 Siskiyou Utility Ware and the Distribution of Fired Clay in South Central Oregon. *In* Pottery of the Great Basi and Adjacent Areas, S. Griset (ed.). *University of Utah Anthropological Papers* 111, Salt Lake City.

1987 Elk Creek Ceramics. *In* Data Recovery at Sites 35JA27, 35JA59, and 35JA100, Elk Creek Lake Project, Jackson County, Oregon. Report prepared for U.S. Army Corps of Engineers, Portland District by INFOTEC Research, Inc., Eugene, Oregon.

MacLaughlin, S.M. and M.F. Bruce
1985 A Simple Univariate Technique for Determining Sex from Fragmentary Femora: Its Application to a Scottish Short Cist Population. *American Journal of Physical Anthropology*, 67:413-417.

McKern, T.W. and T.D. Stewart
1957 Skeletal Changes in Young American Males. Environmental Protection Research Division, Technical Report EP-45.

Miles, A.E.W.
1963 Dentition in the Assessment of Individual Age in Skeletal Material. In *Dental Anthropology*, D.R. Brothwell (ed), pp. 191-210. Pergamon Press, Oxford.

Minor, Rick

1983 Archaeological Testing at the South Umpqua Falls Rockshelters: A Preliminary Report. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 17.

1985 Paleo-Indians in Western Oregon: A Description of Two Fluted Projectile Points. Northwest Anthropological Research Notes, 19:1:33-40.

1987 Archaeology of the South Umpqua Falls Rockshelters, Douglas County, Oregon. Report to the Umpqua National Forest by Heritage Research Associates, Eugene. HRA Report No. 64.

Minor, Rick and Thomas J. Connolly

1987 Archaeological Testing at Times Square Rockshelter, Douglas County, Oregon. Report to Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 55.

Minor, Rick and Kathryn Anne Toepel

1986 The Archaeology of the Tahkenitch Landing Site: Early Prehistoric Occupation on the Oregon Coast. Report to the Siuslaw National Forest by Heritage Research Associates, Eugene. HRA Report No. 46.

Moran, Emilio F.

1982 Human Adaptability: An Introduction to Ecological Anthropology. Westview Press, Boulder, Colorado.

Morejohn, G. Victor

1987 Faunal Remains. In Archaeology of the South Umpqua Falls Rockshelters, Douglas County, Oregon, by Rick Minor (ed). Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 64.

Muller, G.

1935 Zur Bestimmung der Lange beschadigter Extremitatenknochen. Anatomischer Anzeiger, 12:70-72.

Netboy, Anthony

1974 The Salmon: Their Fight for Survival. Houghton Mifflin Company, Boston.

Oetting, Albert C.

1987 Archaeological Testing at Five Sites in the Stinkingwater Mountains, Harney County, Oregon. Oregon State Museum of Anthropology Report 87-4, University of Oregon, Eugene.

1988 Archaeological Investigations on the East Shore of Lake Abert, Lake County, Oregon, Volume 2. Oregon State Museum of Anthropology Report 88-6, University of Oregon, Eugene.

O'Neill, Brian L.
1986 An Evaluation of the Archaeological Potential of the Narrows Site (35DO153), Douglas County, Oregon. Manuscript on file at the Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1987 The Tyee Burial Site (35DO393): A Late Archaic Burial in the Middle Umpqua River Basin. Report on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

1988a Archaeological Evaluation of the Shivigny East Site (35DO397): A Ridge Crest Hunting Camp in the Upper Umpqua Basin, Douglas County, Oregon. Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1988b Archaeological Evaluation of the Powerline Site (35DO398): A Chipping Station in the Upper Umpqua Basin, Douglas County, Oregon. Bureau of Land Management, Roseburg District, Roseburg, Oregon.

1989a Archaeological Investigations at the Grubbe Ranch Site (35DO395), Douglas County, Oregon. Oregon State Museum of Anthropology Report 89-1, University of Oregon, Eugene.

1989b Archaeological Investigations at the Winchester Bridge Site (35DO67), Douglas County, Oregon. Oregon State Museum of Anthropology Report 89-5, University of Oregon, Eugene.

1989c A Cultural Chronology of the Umpqua Basin, Southwest Oregon. Ph.D. Dissertation, Department of Anthropology, University of Oregon, Eugene.

O'Neill, Brian and Isaac Barner
1987 Martin Creek and the Narrows: Late Archaic Occupations in the Umpqua Basin. Paper presented at the 11th Annual State of Jefferson Meeting on Archaeology and History, March 5-6, 1987. Ashland, Oregon.

Ottis, Nancy and Terry West
1984 Archaeologic Testing of the Gatchel Site (35DO252). Rogue Valley Archaeological Society, Grants Pass, Oregon.

Pettigrew, Richard M.
1980 Archaeological Investigations at the Looney Site (35DO13), Douglas County, Oregon. University of Oregon Anthropological Papers 18. Eugene.

1982 Archaeological Investigations in Mill Creek Valley, Crook County, Oregon. University of Oregon Anthropological Papers 26. Eugene.

Pettigrew, Richard M. and Clayton G. Lebow
1987 Data Recovery at Sites 35JA27, 35JA59, and 35JA100, Elk Creek Lake Project, Jackson County, Oregon. Report prepared for U.S. Army Corps of Engineers, Portland District by INFOTEC Research, Inc., Eugene, Oregon.

Ramp, Len
1972 Geology and Mineral Resources of Douglas County, Oregon. State of Oregon Department of Geology and Mineral Industries, Bulletin 75. Portland.

Riddle, George W.
1968 *History of Early Days in Oregon*. Reprinted from the Riddle Enterprise as a facsimile reproduction, The Shorey Book Store, Seattle, Washington.

Robinson, W. S.
1951 A Method for Chronologically Ordering Archaeological Deposits. *American Antiquity* 16:4:293-301.

Ross, Richard E. and Sandra L. Snyder
1986 The Umpqua/Eden Site (35DO83): Exploitation of Marine Resources on the Central Oregon Coast. In *Contributions to the Archaeology of Oregon 1983-1986*, K.M. Ames (ed), pp 80-101. Occasional Papers No. 3, Association of Oregon Archaeologists.

Sapir, Edward
1907 Notes on the Takelma Indians of Southwestern Oregon. *American Anthropologist* 9:2:251-275.

Schlesser, Norman D.
1973 *Fort Umpqua: Bastion of Empire*. Oakland Printing Company, Oakland, Oregon.

Schreindorfer, Crystal S.
1985 Marial: 1984 Archaeological Investigations at 35CU84. Report prepared for the Bureau of Land Management, Medford District, by the Department of Anthropology, Oregon State University, Corvallis.

Shaffer, Sue Crispen
1980 Indian Memories. *Pioneer Days in the South Umpqua Valley*, 13:15-19.

Simmons, Alexy
1985 Ethnography and History. *In* Archaeological and Geoarchaeological Investigations at the Sylmon Valley School Site (35DO275) Southwestern Oregon, R. Lee Lyman (ed), pp 3.1-3.18. Prepared for the Roseburg Sanitary Authority, Roseburg, Oregon by the Department of Anthropology, Oregon State University, Corvallis.

Simmons, Alexy and Michael A. Gallagher
1985 Archaeological Evaluation of the Orchard Site 35DO274 and the Sylmon Valley School Site 35DO275, Roseburg, Oregon. CH2M Hill, Corvallis.

Sims, Cort
1971 Edged Cobbles in the Pacific Northwest. *Tebiwa* 14:2:21-38.

Skinner, Craig E.
1983 Obsidian Studies in Oregon. Unpublished MA Thesis, Department of Interdisciplinary Studies, University of Oregon, Eugene.

Snyder, Sandra L.
1981a Tiller District Test Evaluations, Umpqua National Forest. Report to the Umpqua National Forest by the Department of Anthropology, Oregon State University, Corvallis.

1981b Muddy Timber Sale Site. Report to the Umpqua National Forest by the Department of Anthropology, Oregon State University, Corvallis.

1981c Medicine Creek: Pre- and Post-Mazama Occupation in the Cascades. *Tebiwa* 23.

Snyder, Sandra and William Honey
1979 Cultural Resource Evaluation of Three Recreation Area Sites, Bureau of Land Management, Roseburg District, Oregon. Department of Anthropology, Oregon State University, Corvallis.

Spencer, Lee
1987 Archaeological Testing of the Horseshoe #6 Site (35-DO-400), A Middle Archaic Glade Tradition Site, on the Steamboat District of the Umpqua National Forest. Report to the Umpqua National Forest by Lee Spencer Archeology, Springfield, Oregon.

Stafford, Howard and Fred Voget
1936 Idlwyld Park Reconnaissance. Manuscript on file at the Oregon State Museum of Anthropology, University of Oregon, Eugene.

Stearns, Arba F.
1938 Arba F. Stearns, A Personal Interview. In *Reminiscences of Southern Oregon Pioneers*, a WPA Project. Douglas County Library, Roseburg, Oregon.

Steele, D.G.
1970 Estimation of Stature from Fragments of Long Limb Bones. In T.D. Stewart (ed), *Personal Identification in Mass Disasters*. National Museum, Washington, D.C.

Stein, Julie K.
1983 Earthworm Activity: A Source of Potential Disturbance of Archaeological Sediments. *American Antiquity* 48:2:277-289.

Stewart, T.D.
1979 *Essentials of Forensic Anthropology*. Charles C. Thomas Press, Springfield.

Sullivan, Alan P. III and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50:4:755-779.

Swadesh, Morris

1965 Kalapuya and Takelma. International Journal of American Linguistics 31:237-240.

Tasa, Guy

1987 Human Remains from the Central Oregon Coast. Paper presented at the 40th Northwest Anthropological Conference, Salishan, Oregon.

Taylor, H.C. Jr. and L.L. Hoaglin, Jr.

1962 The "Intermittent Fever" Epidemic of the 1830's on the Lower Columbia River. Ethnohistory 9:2:160-178.

Thomas, David H.

1986 Points on Points: A Reply to Flenniken and Raymond. American Antiquity 51:3:619-627.

Todd, T.W. and D.W. Lyon

1924 Cranial Suture Closures; Its Progress and Age Relationship. American Journal of Physical Anthropology, 7:325-384.

Toepel, Kathryn A.

1985 The Flanagan Site: 6000 Years of Occupation in the Upper Willamett Valley, Oregon. Ph.D. Dissertation, Department of Anthropology, University of Oregon, Eugene.

Toepel, Kathryn A. and James D. Keyser

1987 Projectile Points. In Archaeology of the South Umpqua Falls Rockshelters, Douglas County, Oregon, by Rick Minor (ed). Report to the Umpqua National Forest by Heritage Research Associates, Eugene, Oregon. HRA Report No. 64.

Towle, Jerry C.

1979 Settlement and Subsistence in the Willamette Valley: Some Additional Considerations. Northwest Anthropological Research Notes, 13:1:12-21.

1982 Changing Geography of Willamette Valley Woodlands. Oregon Historical Quarterly 83:1:67-87.

Trotter, M. and G.C. Glesier

1958 A Re-evaluation of Stature Based on Measurements Taken During Life and of Long Bones After Death. American Journal of Physical Anthropology, 16:79-123.

Ubelaker, D.H.

1978 Human Skeletal Remains. Aldine Publishing Co., Chicago.

USDA

1981 Soil Interpretation Record: Newberg Series. Soil Conservation Service, Douglas County, Oregon.

240

Whistler, Kenneth W.
1979 Linguistic Prehistory in the Northwest California Coastal Area. In A Study of Cultural Resources in Redwood National Park, by P.M. Bickel et al., pp 11-25. National Park Service.

Willey, Gordon R. and Philip Phillips
1958 Method and Theory in American Archaeology. The University of Chicago Press, Chicago.

Winthrop, Kathryn
1986 Bogus Creek Site: 35-DO-278, Testing and Evaluation Report. Report to the Umpqua National Forest by Winthrop Associates, Ashland, Oregon.

1989 Bogus Creek Data Recovery Project (35-DO-278). Report to the Umpqua National Forest by Winthrop Associates, Ashland, Oregon.

Zenk, Henry B.
1976 Contributions to Tualatin Ethnography: Subsistence and Ethnobiology. Unpublished MA Thesis, Department of Anthropology, Portland State University, Portland, Oregon.

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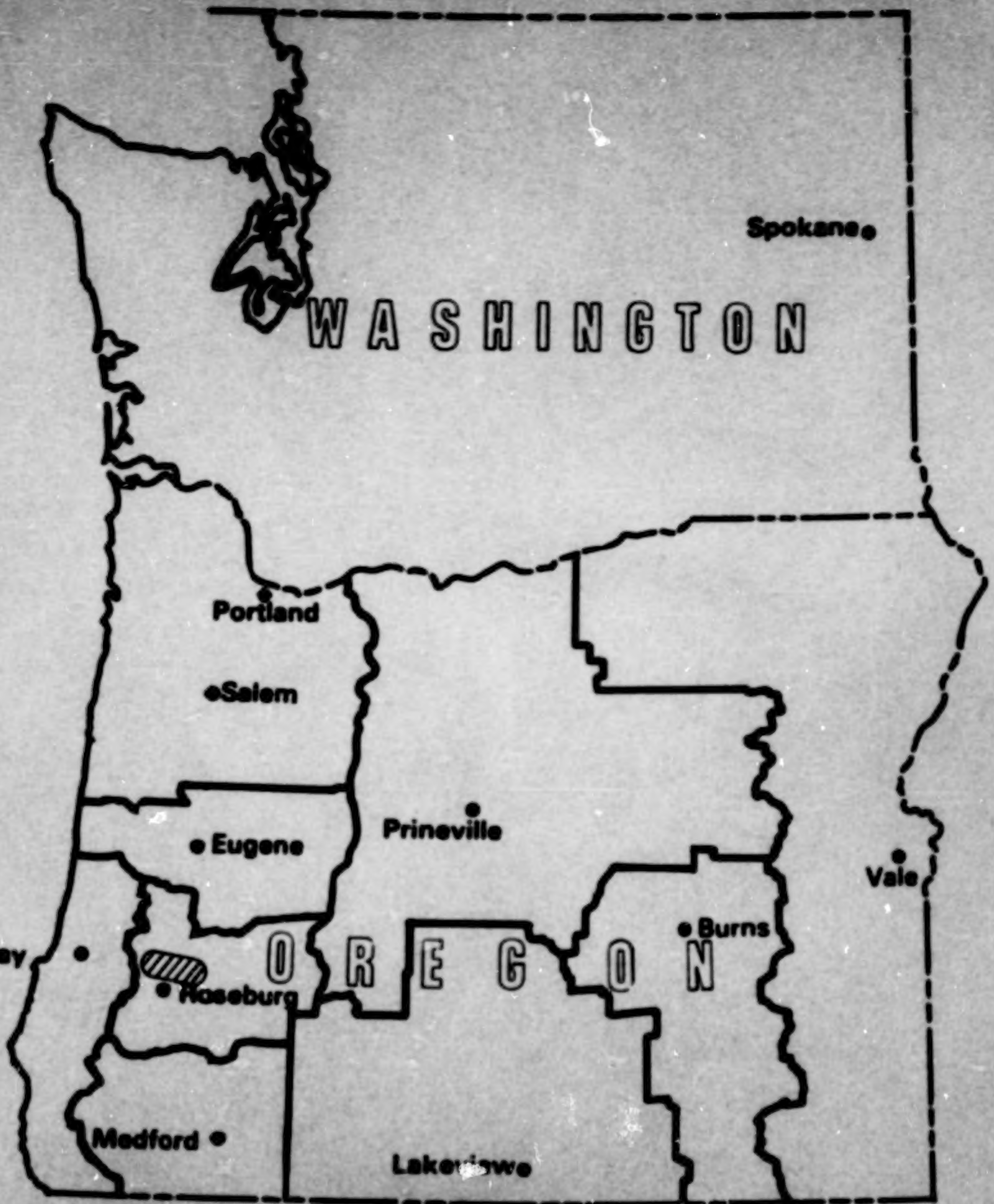
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